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TOBOGGANING



TOBOGGANING
ON CROOKED RUNS

BY THE
HON. HARRY GIBSON

WITH CONTRIBUTIONS BY
F. DE B. STRICKLAND AND 'LADY-TOBOGGANER'

ILLUSTRATED

LONDON
LONGMANS, GREEN, AND CO.
AND NEW YORK : 15 EAST 16th STREET
1894

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PREFACE

MOST of us have our hobbies. For some time the toboggan and how to use it has been mine. I am afraid that, like other horses, my hobby is not altogether free from vice. In the past he has occasionally been guilty of boring. This time he seems to have taken the bit between his teeth and fairly bolted, and I must ride him to as good a finish as I may.

Tobogganing on crooked runs is a sport which is steadily increasing in popularity year by year ; but it is a sport without a literature. With the exception of the past numbers of the 'Alpine Post,' which are not accessible to most people, there is no place to which tobogganers can turn for information about their

favourite sport. This book is an attempt to supply the deficiency ; to show how the sport has gradually developed into its present form, and to give an answer to the many questions about runs, toboggans, and methods of riding which new-comers are constrained to ask each year.

I take this opportunity of thanking most heartily the many tobogganers who have assisted me in my work with contributions, information, or criticism ; and I would particularly mention Messrs. Bulpett and Freeman. Without the information given me by these gentlemen, much of the early history of the sport must have been omitted. To Mr. Strickland I am also under the greatest obligations. He has placed the pages of the ' Alpine Post ' unreservedly at my disposal, both for information and for illustrations ; and he has also assisted me with a chapter on the tobogganing of the last two years. For the chapter

on the difficult question of ladies' riding and equipment I am equally indebted to a lady who prefers to remain anonymous under the *nom de plume* of 'Lady-Tobogganer.' My best thanks are also due to Mrs. Main and Mr. L. Eisner for the photographs from which many of my illustrations are taken.

But for the greater part of this attempt I am myself responsible, and I do not wish in any way to shirk anything which that responsibility may involve. Of the difficulties of writing clear and practical hints to beginners no one, perhaps, is so well aware as the writer. But I welcome criticism. For if my views are sound, criticism can but strengthen me; if I have fallen into error, those who point out my mistakes will have a claim upon my gratitude in helping forward the best interests of the sport I have learnt to love.

HARRY GIBSON.

ST. MORITZ: August 7, 1894.

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TOBOGGANING

CHAPTER I

INTRODUCTORY

‘WE Swiss looked upon tobogganing as a fitting amusement for children, until you Englishmen came among us and made of it a sport for men ; now you have gone still further—you have made that sport an art.’ So spoke Herr Peter Badrutt while addressing the St. Moritz Tobogganing Club in 1894, and his words sum up shortly the way in which a new sport has arisen in the Alps of Switzerland. Starting from small beginnings, originally, as he says, nothing more than an amusement for children, a grand sport has been gradually growing up, and one which is already worthy to rank high among the sports of Englishmen.

In comparison with other sports its history of some twelve or thirteen years may appear insignificant ;

but in this short time its growth has been so rapid, and it has been developed upon such novel lines, that, if it cannot look back upon a lengthy past, it can, at any rate, look forward hopefully to a great future.

Modern tobogganing, or coasting, as practised at the two well-known winter resorts of Davos and St. Moritz, is quite a different thing to what most people imagine it. A friend of the writer's, who had only seen tobogganing in its very simplest form, on those rare occasions on which it was possible in England, refused to admit for one moment that the terms 'skill' or 'science' could by any possibility be applicable to such an amusement. He dismissed the subject contemptuously as 'a form of lunacy which consisted in sitting on a thing like a tea tray and letting yourself slide to the bottom of a hill.' As there are a great many people in England and elsewhere who are of the same opinion as this gentleman, who, like him, have never passed a winter in the Alps, and so have never had an opportunity of seeing to what lengths this sport has been carried, it may be well to show at once how and why it is that tobogganing in the Alps is such a different thing from the same form of amusement as practised in other parts of the world.

In the first place we do not sit upon our 'tea

trays.' We used to do so in years gone by ; but times have changed, and in the most modern racing position we lie flat upon our faces and 'ride,' as it is called, head foremost, steering or checking the pace as may be desired by means of iron teeth (called rakes) which are fastened to the toes of our boots. It is true that the sitting position still exists. In one of the great annual races no other position is permitted ; but this is a relic of the past, and is not in any sense modern tobogganing. The head-foremost position is so much faster and safer, and gives so much greater control over the 'tea tray,' that, were it not for the race in question, the sitting position would have died out long ago, at any rate as far as the men are concerned. The ladies, however (for ladies go in for the sport with just as much enthusiasm as men), still cling fondly to the old position. They say it is more comfortable and 'more dignified' than the other, and no amount of reasoning can induce them to leave it for more modern methods. Still this does not affect the original statement that the modern racing position is head-foremost.

The 'tea tray' has long broken loose from its primeval simplicity. It is no longer that flat, simple construction that Englishmen are accustomed to associate with the hour of five o'clock. It has

developed, changing its shape, and becoming more and more perfected as a racing machine as the years have gone by. An infinity of time and labour has been devoted to its improvement, and now—now it is a thing of beauty, put together with the greatest care, and constructed upon the most approved principles. It may not be the best shape possible—we may yet obtain something faster and more easily



Modern Racing Position and Machine

steered—but it is at present the most satisfactory racing machine that the brains of many inventors have been able to devise. Built entirely of the best steel, running lightly and gracefully upon its round spring runners, it looks what it is meant to be—the embodiment of all that man can desire for rapid motion and easy steering upon ice or snow.

Now we come to the most important feature of tobogganing in the Alps, the point in which it differs

essentially from all other forms of the sport—the shape of the artificial runs.

In Canada, Russia, and other places, where tobogganing is one of the regular winter amusements, artificial runs have reached a very high stage of development. But in these places the runs or slides are almost always quite straight, or if they change direction at all they do so in a gradual curve. Such things as sharp corners are unknown. In the Alps, on the other hand, all the principal artificial runs are made to twist about in every direction. Every variety of turn, from the sharp right-angled corner to the most gentle curve, is to be found there. The slope of the ground changes every few yards, sometimes even running upwards instead of downwards. Leaps, or sudden depressions which cause the machine to leave the ground and shoot through the air before touching the ground again, are introduced. The great object in building a run is to make it difficult as well as fast. And herein lies the charm of tobogganing in the Alps. Men soon get tired of perpetually plunging down the straight shoots of Canada. It requires a certain amount of nerve, but no skill to speak of. Here, however, all is changed. There is always something to be learnt, some new experiment to be made in riding some

particular difficulty. The simple amusement has become a splendid sport, and one which never palls. It is a sport, too, which appeals to all Englishmen, as it calls into play all those qualities for which England as a nation is famous. The decision quickly called for and instantaneously carried out, the opportunity of exercising pluck, nerve, resource, and activity, the quick eye for a curve, the necessity for hand and eye to work exactly together—all these endear it to the sportsman as a pastime worthy of the name of sport.

The most famous of the crooked runs of the Alps is the Cresta Run of St. Moritz, which has been well called 'the steeplechase course of the tobogganing world.' It is now a masterpiece which it has taken many years to produce. For ten years Mr. W. H. Bulpett, the president of the St. Moritz Tobogganing Club, has laboured to bring this run closer to perfection, and year by year it has improved under his care, until now, in 1894, it occupies the proud position of being the most sporting run in the world. This splendid run will be fully described later; at this point it will be sufficient to show in what its greatness consists.

When an ice run turns a sharp corner, the outside of the curve has to be banked up. If there were no

banks it would be impossible to make a toboggan turn on the slippery ice. Even cyclists, who do not travel at anything like the same rate of speed as a toboggan, and whose tracks are by no means so slippery as the smooth iced surface of an artificial run, have found it necessary to bank up the ends of their racing tracks in order to go round them fast. The corners on a toboggan run are banked in the same way, but the banks are set at a far steeper angle. In some cases, indeed, the turn is so sharp and the pace so great that the banks have to be almost perpendicular.

On the Cresta Run the banks are constructed with fiendish ingenuity, in such a manner that, while a toboggan can turn the corner in safety at a particular rate of speed, yet if it goes a little too fast the pace will carry it up and over the bank, to plunge into the soft snow at the side of the run. Nor is there any great margin for error, as the banks are never built higher than is absolutely necessary. In racing, of course, the object of each man is to go round the corners as fast as possible, and this is where the skill of the finished tobogganer comes in. The crack rider will choose to a nicety the fastest course round each bank, and will steer his machine exactly along that course. He will go round every bank at the

maximum speed consistent with safety, while the less skilful rider, trying to imitate him, will find that without such skill he must either go slower or pay the penalty of his rashness by going over the top. A lady, exasperated by a series of falls, once described tobogganing on the Cresta as 'marrying in haste and repenting at leisure.'

On this run, too, the tobogganer realises the truth of the old adage, 'Misfortunes never come singly.' The main difficulties are all complicated ones. A sharp turn is closely followed by at least one—more often two—others, and the bewildered novice is liable to feel lost when adventuring its mazes for the first time. In fact, there is a dubious story sometimes told to the effect that a gentleman from Davos in his first essay on the Cresta Run, being somewhat bewildered by the unexpected steepness of the 'Church Leap,' imagined that he must in some way have got out of the run without knowing it, and promptly threw himself off his toboggan. The truth of this tale I am not prepared to vouch for.

The familiarity which breeds contempt causes the Cresta Run to suffer somewhat in the estimation of those who see it every winter. They are apt to pass unheeded or accept as matters of course the many wonders that are gathered together in that transparent

structure, which is in reality a marvel of which St. Moritz may well be proud. How neat and clean and bright it looks as we see it from the grand stand on one of those beautiful sunny days like the Grand National race day of 1894 ! The stands are crowded



View of the Grand Stands on Race Day :
Cresta Run, St. Moritz

with spectators, eagerly discussing the chances of the various competitors. Although it is not yet nine o'clock there are many ladies among them, whose bright summer dresses and parasols present a curious contrast to the winter mantle of snow and ice which

is spread over all the country round us. But summer clothing and parasols are necessary ; for, despite the fact that as far as the eye can reach the landscape is white with snow, despite the early hour and the fact that it is freezing hard in the shade, the sun's rays are beating down upon us with an almost tropical heat—a combination of summer and winter which no one who has not experienced it would believe possible.

As there are still a few minutes before the race commences, we have time to glance round us and take a look at those portions of the run which can be seen from the stands. The actual starting-place is not visible, but we get an excellent view of the most difficult corners. On our right is the long steep slope leading from the 'Stable Junction' to the 'Church Leap.' Straight below us in the shadow of the pine trees looms that huge, gloomy-looking bank—the first bank of the leap—which turns the course at a sharp angle and is the greatest difficulty on the run. Further to our left are the second and third banks, and the beauty of their curves is rendered very striking by the glittering light which is reflected back from their smooth icy surface. The run then disappears behind the hill, and we lose sight of it for about one hundred and fifty yards, when it comes into view again at those famous right-angled corners

'Battledore' and 'Shuttlecock.' Far away in the distance a broad silver streak amid the trees betrays the position of the 'straight.'

High up on the hill behind us stands the telegraph board, upon which the time of each competitor will be displayed as soon as he has finished his course. On a crooked run like this it is impossible for two men to race down side by side, so all races are decided by the time test, the winner being the man who makes the fastest aggregate time on three courses. There is also a special prize for the man who makes the fastest single course during the day's racing. By the printed race cards distributed among the spectators they can tell the names of the various competitors and the order in which the men will start for each course, this order of starting having been decided by lot some time previously.

But it is time for us to turn our attention to the business of the hour. The village clock is striking nine, and sharp to the appointed time the first competitor is started on his way. Perhaps he is one of the favourites for the race, and as the skim of his runners is heard along the 'Terrace' the crowd bends forward eagerly to see how he will acquit himself. A pause of a few seconds, and then he darts into sight at the 'Stable Junction,' and dives head-foremost down

the slope to the 'Church Leap.' To the uninitiated it is awful. There is something uncanny in watching that motionless figure borne swiftly to what seems certain destruction on that grim black bank below. But suddenly there comes a change. 'Like a flash he leaps back upon his machine, and as he digs the steel rakes on his feet hard into the ice the speed perceptibly slackens. As he takes the leap the machine swings round sharply to the left as though of its own accord, and he turns the corner beautifully on a fast low course. Another turn to the right, and again sharp round to the left, and his friends heave a sigh of relief as he gets through in safety, and, swinging off the third bank like a stone from a sling, shoots away out of sight down the 'straight to "Battledore."'

But his dangers are by no means over yet, and every eye is turned towards 'Battledore,' to watch for his reappearance. After what seems an age, but is in reality only a few seconds, he comes into sight again, braking hard up the 'Rise,' but travelling very fast—too fast, almost, for, see, he is nearly over 'Battledore'! Surely he can never get round 'Shuttlecock' at that pace! He's fallen! No! . . . Yes! . . . No! One last supreme effort—a well-timed swing just when all seemed lost—has pulled him through, and he races fast round the tops of the banks of 'Shuttle-

cock' and the 'Stream Corner' into the straight, down which he flies with ever-increasing speed, a diminishing speck in the distance, till he rounds 'Bulpett's Corner' and disappears from our sight. Then, skimming down the 'Cresta Leap' and past



'Leaping high into the air as he tops the brow of the hill'

the winning-post at a pace which is now little short of eighty miles an hour, he tears up the steep slope at the finish, leaping high into the air as he tops the brow of the hill, and ends his wild career at last in the snow which marks the confines of the run.

As he passed the winning-post the flag-man has dropped his flag and thus signalled the time-keeper to stop the watch ; and almost before our competitor, flushed with excitement and panting from the exertions he has gone through, has had time to pick himself up off his machine the flag-man has called out his time, having read through his telescope the figures displayed upon the telegraph board three-quarters of a mile away.

The same process is repeated as the other competitors follow each other in quick succession. Some ride well ; others, less skilful, go more slowly ; some few come to grief in trying to go faster than their skill will permit and take a tumble in the snow. Serious accidents are fortunately rare, and as a rule the luckless wight who has fallen picks himself up at once amid the mingled cheers and laughter of the spectators. We spend a pleasant and interesting morning watching the races, and when it is all over and we make the best of our way homewards those of us who have never seen it before realise that we have been gazing at a spectacle which we are never likely to see elsewhere. The excitement of watching men racing neck and neck may be wanting, the pace may not be quite so great as that on the straight shoots of Canada, but the interest never flags and there is sufficient

pace and more than enough excitement in watching the different methods of mastering a difficult turn to satisfy most people.

But if the spectators are excited what must be the sensations of those who are racing? How can I best attempt to describe them? That strange thrill—is it nervousness or what?—that shoots through a man as he rushes down at the leap; that mad feeling of triumph which comes over him as he feels that the difficulty is safely past; the wild excitement of flying down the straight. I can call to mind no other sport which has sensations like it, no sport in which the brain seems to act so rapidly and continuously, and none which at the same time compels excitement and demands a cool clear head to such an extent as tobogganing on the Cresta Run.

But the Cresta is by no means the only run of this kind in the Alps. It is the longest and most difficult, and is not a run to be lightly undertaken by the novice; but there are many others of a less arduous character on which he can disport himself in safety, and yet find sufficient difficulties to render them interesting. At Davos there is the Buol Run, the oldest run in the Alps, and also a pleasant little run engineered and financed by Mr. Dobson, an annual visitor to that place. At St. Moritz, besides

the Cresta, there are the Village and Lake Runs. All these are artificial ice runs of varying degrees of difficulty, and those who cannot manage to suit their tastes on one or other of them must indeed be difficult to please. The youthful athlete, to whom the finesse and science of riding on an ice run do not appeal, will find an outlet for his energies on the Klosters road near Davos. This is an ordinary post road, full of twists and turns, very steep, and that portion of it over which racing takes place is nearly two miles long. The corners are not banked, the road is left in its natural state, and on a day when the snow is deep and the going heavy the most vigorous athlete will find that he has had more than enough exercise by the time that he has raced down to the bottom.

The great annual events in the tobogganing world are the International Races at Davos and the Grand National Race at St. Moritz.

The International Races are usually run some time in the middle of January. There are at present two—one open to all classes of machines ridden in any position, the other confined to the machine of the country ridden in a sitting position. There are rumours that in 1895 there is to be yet another addition in the shape of an International Race for

ladies. Some gentlemen have already given a challenge cup for the purpose, and the details of the race are being arranged. The Grand National Race at St. Moritz takes place on the Cresta Run, usually about a month after the International Races.

There is much friendly rivalry between Davos and St. Moritz, and, as may be imagined, excitement runs high as the time draws near for one of these annual contests. Representatives are chosen from each club, and the competition for the handsome challenge trophies is very keen.

Much might be written about the sunny skies, the splendid winter weather of the Alps, the lovely scenery amid which we race, but enough has been said to show what manner of sport this is, and those who would follow it further will find it fully described in the body of this work.

CHAPTER II

HISTORICAL

THE word 'Toboggan' is said to have originated among the North American Indians, who applied it to the flat wooden sledges which they used for carrying provisions from camp to camp. From them the use of the toboggan spread to the more civilised inhabitants of Canada, and for many years tobogganing has been looked upon as the great winter amusement of that country. Of late years it has been taken up keenly in the United States, where 'coasting' and 'Bob-sleighing' have now become very popular. Tobogganing also obtains among the English colony at St. Petersburg, where an excellent double 'slide' is constructed every winter. But tobogganing as practised at these various centres has had little or no bearing upon its development in the Alps of Switzerland, and there is no necessity to dwell further upon it here.

It is very hard to find out when the toboggan or

coaster first made its appearance in Switzerland. We can trace it back a very long way in Swiss history, but there is no record of its actual introduction into the country. Tradition tells us that it was introduced by the Romans, but leaves us in happy ignorance as to how or why. Perhaps we may assume that in the degenerate days of the Empire the Roman soldiers were too lazy to care about the long weary tramp down the snowy slopes of the Alps, and preferred the easier and more exciting method of sliding down. Their shields would be the most natural things to use as toboggans, since they were always at hand and would slip nicely over the snow. It is amusing to imagine a Roman legion coming down a pass, seated on their shields and steering with spears. The only objection is that their shields would probably run away with them, and leave them at the mercy of any rustic they might meet at the bottom. In reality this is not such an improbable guess as to the origin of tobogganing in Switzerland as it might appear at first sight. To this day sportsmen shooting in the Himalayas are wont to make use of the tin basins, which form part of their camp equipment, to toboggan down the passes. It is not such a very long stretch from the tin basin to the

Roman shield after all. However, whether the toboggan owes its introduction into Switzerland to the degeneracy of the Roman soldiery or to the genius of the Cæsars, the fact remains that it has been in existence there for many centuries as a practical means of descending snow slopes and carrying provisions upon level ground.

To turn to more historic times. Tobogganing was never taken up seriously as an amusement until Englishmen began to take up their residence in the Alps for the winter. The earliest of the winter resorts was Davos-Platz, some 5,000 feet above the sea-level, which was then only a small Alpine village, but has since expanded into a place of over five thousand inhabitants.

In 1877 the English colony at Davos was a very small one, but like most English colonies they were determined to get as much amusement out of the winter as possible. Snow slopes naturally suggested tobogganing; the machine of the country, the common wooden coaster, supplied the place of the toboggan. The Englishman borrowed any kind of coaster he could get hold of, and in fearless ignorance as to the correct names for things, dubbed it a toboggan, a name which has been applied to all kinds of racing machines ever since.

Having no one to teach him any better he rode it in the same manner as the Swiss peasants, sitting up and steering with his feet.

At first he was content with sliding down straight snow slopes, but after a short time he grew ambitious, and tried the winding footpath behind the Buol Hotel which was afterwards to become so celebrated as the Buol Run. Then going further afield, steep roads in the neighbourhood, such as the Clavadel road and the steep winding post road to Klosters, were utilised and found to provide excellent amusement. The sport was improving, but still he was not satisfied. The nature of the Englishman is competition. Whether riding, driving, walking, running, or sliding down a hill he must race, otherwise the amusement palls on him. So toboggan racing began, and naturally as competition grew keen improvements were introduced. No longer content to ride upon a hired steed, he purchased one for himself. He tried to make it faster by lengthening the runners, and by raising or lowering the seat. He even went so far as to add weights to it to increase his pace, though in those days this proceeding was looked upon as somewhat unsportsmanlike. He added a cushion which made his boneshaker more comfortable to sit upon, and

finally—most important improvement of all—some genius whose name has not been preserved introduced short wooden pegs, which not only supplanted the feet for steering, but could be used to pole the machine along when the going was heavy.

Tobogganing was now firmly established as a popular amusement, but it might have remained a long time at this stage had it not been for the impetus it received through the action of three Englishmen residing at Davos, Messrs. J. A. Symonds, M. Horan, and P. Broadbent. In the winter of 1882-3 it occurred to these gentlemen that it would be interesting to see how their countrymen would fare when pitted against the native Swiss. To this end they organised an International Race to take place on the steep post road to Klosters, which had already attracted the attention of tobogganers as an excellent course, and was about the best that could have been selected for the purpose. This race has since become an annual event, and so satisfactory has the Klosters course proved, that, in spite of the superior attractions of the ice runs which have since come into existence, all the International Races except one have been held upon it. Full particulars as to this road will be found later in the chapter on 'Toboggan Runs.' It is sufficient here to state that

the course is a little under two miles long, very steep and is full of twists and turns, so that it is an excellent test of tobogganing skill. The race is always run in one heat, the competitors starting after one another at minute intervals ; and their times



'Passing' on the Klosters Road

being taken by two watch-holders, one at the start, the other at the finish, by means of two watches set exactly together.

The first International Race was run on February 12, 1883. A fresh fall of snow the day

before rendered the going fearfully heavy, but notwithstanding this the race was duly brought off. As might have been expected under the circumstances the race was won by the men whose strength enabled them to pole their machines along quickest through the deep snow.

Twenty-one competitors of various nationalities started, and the race resulted as follows :—

	Name	Nationality	Total
			min. sec.
1	{ P. Minsch . . .	Swiss . . .	9 15
	{ G. P. Robertson .	Australian . .	9 51
3	C. Buol . . .	Swiss . . .	9 53
4	C. Palmy . . .	" . . .	

It is curious that a race lasting over nine and a quarter minutes should have resulted in a dead heat, more particularly when it is remembered that the men were racing against time, and neither could possibly tell what the other was doing. The dead heaters were big men of over 6 feet in height, and were both destined to make their mark in future years—Minsch as a winner of a great many races, and Robertson as an organiser of the sport. Peter Minsch was the Klosters postman, and it was part of his daily duties to go down the road to Klosters. As he performed this duty upon his 'coaster' and took

advantage of it to practise pegging, his great success as a tobogganer will be readily understood.

Next year (1884) the race took place on February 7. The course was in much better condition for racing, and consequently the times were much faster. Twenty competitors started and the race resulted as follows :—

	Name	Nationality	Total
1	P. Minsch . . .	Swiss . . .	min. sec. 6 35
	{ C. Digby Jones . .	English . . .	
2	{ W. Hornblower . .	" . . .	6 40
	{ J. Vetsch . . .	Swiss . . .	

In the winter of 1884-5 Mr. J. A. Symonds, seeing that the race had now become a permanent institution, presented a silver challenge cup to be held by the winner for one year. The conditions at first were that the cup should become the property of anyone who could hold it for two successive years, but these conditions have since been changed, and the cup cannot now be won outright under any circumstances.

The first race for the cup was run on January 27, 1885. For the first time in the history of the race Herr Minsch failed to carry off first prize, being defeated after a splendid struggle by an Englishman,

Mr. G. Dale, who thus became the first holder of the cup.

RESULT

	Name	Nationality	Total
			min. sec.
1	G. Dale . . .	English . . .	6 35
2	P. Minsch . . .	Swiss . . .	6 36
3	Harold Freeman . .	English . . .	6 40
4	F. Henderson . .	" . . .	6 41

Mr. Harold Freeman, who occupied the third place in the race, was now making his first appearance as a tobogganer. Although one of the best men who ever got on a toboggan, fortune has never yet smiled on him in any of the great races. He has won innumerable lesser races on the Buol Run and elsewhere, but by some strange freak of fortune has never managed to get actually first in the International. Again and again he has finished second, third, or fourth ; once, in 1891, he made a dead heat with two others for first place, but lost, on running it off. Such a skilful rider certainly deserves to have met with better luck. But if he has not succeeded in winning he has made his name famous in other directions. No one has done more for the sport at Davos than he. He has watched over it from the days of its infancy, and under his able rule the Buol Run gradually became one of the most noted runs in the

Alps. When he left Switzerland in 1892 (it is to be hoped only for a time) tobogganing at Davos suffered a loss from which it has not yet recovered, and it will be difficult to find anyone of sufficient experience or capacity to fill his place.

So far nothing has been said about tobogganing at St. Moritz, another Alpine village in the neighbouring valley, which had also been growing as a winter resort, although in numbers its colony was still far behind that of Davos.

As the winter visitors became more numerous, tobogganing had developed upon very much the same lines as at Davos, and no doubt those who went over the pass from St. Moritz to Davos to take part in the annual race got many a wrinkle on racing and other matters from the older colony. But at St. Moritz there was no road like that at Klosters which would make a really good course. Such roads as existed—the Cresta road, and that from the Kulm Hotel down through the village—were used certainly, but they did not satisfy the cravings of the tobogganing spirit, and so runs were constructed at more suitable places. The Lake Run was the earliest of these. It started from the Kulm Hotel and ran down the footpath to the Beaurivage Hotel, passing through a gateway which had a straw dummy fastened to the post

on the outside of the curve to prevent accidents. It then turned to the left down the main road, and some seventy yards further on again turned sharp to the right, and ran down over the meadows on to the frozen lake, where anyone was at liberty to continue as far as he or she pleased, or until the impetus gained in descending the steep slope on to it was lost.

In process of time it was found that it was much easier to race fast round a corner if the outside of the curve was banked up with snow. But snow banks were soon cut to pieces by the sharp runners of the coasters, so they had recourse to icing to make the surface harder. Thus the first stage in the development of the ice run was reached. By the same methods the footpath behind the Buol Hotel at Davos was gradually developing into the Buol run.

At St. Moritz there were numerous races just as there had been in earlier times at Davos, but there was no attempt at organisation until the winter of 1884-5. During that winter five gentlemen—Messrs. Robertson, Digby Jones, Metcalfe, Biddulph, and Bulpett—formed what was known as the outdoor amusements committee of the Kulm Hotel. These gentlemen determined to organise a race which would induce their Davos neighbours to cross the pass and compete with them at St. Moritz, and which would

at the same time give St. Moritz tobogganers an opportunity of returning the hospitality shown them when they went to Davos for the International Race. The first thing to do was to build a run. After much



The Church Leap in 1885

prospecting a suitable course was marked out down the steep gully between St. Moritz and the village of Cresta, and under the able direction of Mr. Robertson the Cresta run was constructed for the first time.

As may be imagined, the run was neither so well or so carefully made as it is now, most of the curves being false and the icing anything but thorough. It was however a much more ambitious attempt than anything which had preceded it. The length was three-quarters of a mile and the start was at the 'Stable Junction.' The Church Leap was a mild affair compared to what it has since become, the first bank being mostly covered with trees which have since been removed. Just before the 'rise' there was a sharp right-angled turn to the right followed by some lesser curves and then a bold sweep into the straight. After crossing the road the run turned to the right over Fenwick's Leap and finished in the meadows below.

Altogether it was a most sporting course, and it was a wonderful thing for a man who had had no previous experience to design and execute such a run. Mr. Robertson deserves the thanks of all tobogganers for having shown the way.

As soon as the run was finished a challenge was sent to Davos which was promptly accepted. Mr. Robertson having laughingly suggested that the new race should be called the 'Grand National' as a fitting set off to the 'International' at Davos, his suggestion was adopted, and thus the annual race,

which was to rival the International in its importance, was started.

There were twenty competitors—ten from Davos and ten from St. Moritz—and the result could hardly be considered encouraging to St. Moritz, as the first three places were filled by representatives of Davos. The times were taken in the same manner as in the International at Davos, with two watches—one at the top and the other at the bottom. Three courses were run so as to bring the total distance up to that of the Klosters course, and the man doing the fastest aggregate on the three courses was the winner. The race took place on February 18, and resulted as follows :—

	Name	Nationality	1st course	2nd course	3rd course	Total
			m. s.	m. s.	m. s.	m. s.
1	C. Austin . .	English, Davos .	1 43	1 44	1 42	5 9
2	P. Minsch . .	Swiss, Klosters .	1 46	1 45	1 42	5 13
3	G. Dale. . .	English, Davos .	1 40	1 49	1 45	5 14

Fastest time for a single course : G. Dale, 1 min. 40 sec.

1886.

This year the International Race was held on January 27, under most extraordinary conditions. The day before the race the temperature rose, a Föhn wind set in, the snow melted rapidly and the road became a

running stream of water. Towards evening the weather changed completely, and a hard frost set in which lasted all night. The result was that on the morning of the race-day the course was practically a sheet of ice from top to bottom, and very fast times were made.

	Name	Nationality	Time	
			min.	sec.
1	G. Baillie Guthrie . .	English, Davos . .	5	47
2	P. Minsch . . .	Swiss, Klosters . .	5	48
3	H. Freeman . .	English, Davos . .	5	50

These times were a long way the fastest on record for this race, and Mr. Guthrie's time of 5 min. 47 sec. has remained a record for a Swiss coaster ever since. In spite of improvements in machines, position, and methods of riding, it remained unbeaten by any class of machine until 1894, when the record was lowered under very doubtful circumstances, which will be described later.

In the Grand National Race a month afterwards Mr. Guthrie had the misfortune to fall in the last heat, when he apparently had the race in hand. The race was run over the same course and under similar conditions as the year before, except that the times were taken by one watch-holder stationed at a point where he could see the flags fall as each com-

petitor started and finished his course. The St. Moritz men improved on their performance of the year before, one of them obtaining second place.

	Name	Nationality	1st course	2nd course	3rd course	Total
			m. s.	m. s.	m. s.	m. s.
1	P. Minsch . .	Swiss, Klosters . .	1 36 $\frac{1}{2}$	1 35 $\frac{3}{4}$	1 31 $\frac{2}{3}$	4 44 $\frac{1}{2}$
2	C. Metcalfe .	English, St. Moritz	1 38 $\frac{3}{4}$	1 37 $\frac{3}{4}$	1 33 $\frac{1}{2}$	4 49 $\frac{1}{2}$
3	H. Freeman .	„ Davos . .	1 39	1 37 $\frac{3}{4}$	1 32 $\frac{1}{2}$	4 48 $\frac{1}{2}$

Fastest time: P. Minsch, 1 min. 31 $\frac{2}{3}$ sec.

In this race a place had to be won by a full second, so Messrs. Freeman and Metcalfe were considered as having tied for second place. On running off the tie Freeman fell.

1887

The International Race was run on January 26, and after another close and exciting struggle Peter Minsch succeeded in turning the tables on his conqueror of the year before.

	Name	Nationality	Time
			min. sec.
1	P. Minsch . . .	Swiss . . .	6 43
2	G. Baillie Guthrie .	English . . .	6 45
3	P. Vetsch . . .	Swiss . . .	6 51
4	Harold Freeman .	English . . .	7 2

The Grand National was run on February 19, and was productive of yet another close contest. Unfortunately Herr Minsch had to be disqualified owing to his having broken the rule forbidding a trial course before the race. The run was considerably longer than it had been before, the total length being 1,650 yards. The start was from the pine trees about three hundred yards above the church immediately overlooking the Kulm Hotel, the finish being in the fields within some two hundred yards of the village of Cresta. Battledore and Shuttlecock corners were introduced for the first time. They were so named by Mrs. Bancroft but in the reverse order, the present Battledore being called Shuttlecock and vice versa.

The race was very exciting. In the first heat Mr. Guthrie beat Mr. Bertie Dwyer (a boy of 14) by some $5\frac{1}{2}$ seconds, but so well did the latter ride in the next two courses that he only lost the race by one-fifth of a second. His last course took the 'Fastest Time Prize.'

	Name	Nationality	1st course	2nd course	3rd course	Total
			m. s.	m. s.	m. s.	m. s.
1	G. B. Guthrie	English, Davos .	2 3 $\frac{4}{5}$	2 1 $\frac{1}{2}$	2 3 $\frac{2}{5}$	6 8 $\frac{3}{5}$
2	B. Dwyer .	„ St. Moritz .	2 9 $\frac{2}{5}$	2 0 $\frac{3}{5}$	1 58 $\frac{3}{5}$	6 8 $\frac{3}{5}$
3	H. Freeman .	„ Davos .	2 5 $\frac{1}{5}$	2 4 $\frac{3}{5}$	2 1	6 11

Fastest time : B. Dwyer, 1 min. 58 $\frac{3}{5}$ sec.

The following extract from the 'St. Moritz Post' of the period is of interest : —

'Mr. Cornish caused the chief excitement in the race by riding his toboggan head first. To do this he lays his body on the toboggan, grasping its sides well to the front, his legs alternating between a flourish in mid air and an occasional contact with mother earth or rather father ice and snow, for the purpose of controlling his course. To see him coming headfirst down the Leap is what the Scotch call "uncanny." Hitherto Mr. Cornish has been particularly successful in negotiating the difficulties of the course, and had almost succeeded in obtaining converts to this way of tobogganing, which at any rate has the charm of novelty. Unfortunately however he came to grief more than once during the race, though the extraordinary quickness of his recovery astonished the onlookers.'

This is the first recorded attempt at the head-foremost position which has since become universal.

So far the chief things noticeable in the history of the sport have been the superiority of Davos tobogganers to those of St. Moritz, and the fact that no serious attempts have been made to obtain a better racing machine than the 'Swiss' or, with the exception of Mr. Cornish's essay, a better position than

sitting. Adding extra weight had been found an advantage on the Klosters road and had been carried to such a pitch that there was a great outcry against it, and in the conditions of both the big races we find rules introduced forbidding the practice. Amid the stormy discussions on this and other matters, no one could have guessed that the reign of the Swiss coaster was ended, that the sitting position was about to give way before a faster and safer one, and that the time was coming when there would be far more serious questions to occupy the minds of the tobogganing world than petty disputes about weighting, pegs, size of screwheads, &c. But so it was. The next winter was to mark the commencement of a new era in the history of the sport.

1887-8

This was a splendid winter for tobogganers. Snow fell early and in such quantities that the Cresta run had to be marked out by a snow-plough drawn by four horses. Early in the winter Mr. L. P. Child of New York came to Davos. This gentleman had already done a good deal of coasting in America and at once set to work to have a 'clipper slid' of the American type constructed in Davos. He named it 'America' and rode it headfirst, lying on his side and



L. P. CHILD (U.S.A.) ON 'AMERICA'
Winner of the International Race, 1893

steering with the side or toe of his foot. When he first appeared upon it, tobogganers looked on with curiosity at the novel machine and position, but for a short time they hardly appreciated the advantages of either. However he soon showed, on the Buol run and elsewhere, that he could hold his own with the best riders on their 'coasters,' in spite of the fact that he lay still while the others increased their pace by pegging. The International Race took place on January 26, and for the first and last time in its history it was run on the Clavadel road instead of the Klosters course. This road is fifty yards short of a mile, is considerably steeper than the Klosters road, and has two or three very awkward corners.

In the race Mr. Child demonstrated the superiority of his machine and position, winning on the two courses by 3 seconds.

	Name	Nationality	1st heat	2nd heat	Total
			m. s.	m. s.	m. s.
1	L. P. Child .	U.S.A. . .	2 58	3 5	6 3
2	C. Austen .	England . .	2 59	3 7	6 6
3	H. Freeman .	" . .	2 58	3 8	6 6
4	P. Minsch .	Switzerland .	2 58	3 13	6 11

St. Moritz had no representative in the first six places. This, coupled with the fact that St. Moritz tobogganers had never yet succeeded in winning

either the International or Grand National Races, brought forth a strong article in the 'Alpine Post' which is worth repeating :—

‘ There is no begging the fact that collectively and individually the Davos riders are superior to their friends from St. Moritz in this particular sport. The reason is not far to seek. A keen Davos tobogganer thinks nothing of a dozen or more runs every day for one or perhaps two months ; whereas the most energetic St. Moritzer is in an extremely self-complacent frame of mind if for a fortnight on end he has made two or three courses a day. Tobogganing, like every other sport, cannot be excelled in without hard practice and a very keen desire to win. We trust that St. Moritzers will ultimately learn this lesson. It has been taught them not only at Davos but also on their own course for the last two or three years. In that case we may hope after the coming Grand National to change our tune and hail a St. Moritzer as the winner.’

Whether owing to these remarks or from other reasons the Grand National race was won by St. Moritz that year and it has remained in the hands of St. Moritz riders ever since. Certainly whatever their faults, no one can accuse St. Moritz tobogganers of the present day of being wanting in keenness.

After being repeatedly postponed owing to a succession of heavy snowfalls, the Grand National was at last brought off on March 1. Two of the competitors rode toboggans of the new 'America' type, both of which were constructed at Davos. Mr. E. Cohen had one made directly after the International. He first tried riding it headforemost, but found he could not manage it in this position and eventually raced sitting up, in which position he proved successful. Mr. Wilbraham, a Davos representative, rode a similar machine headfirst, but put himself out of the race by falling. Mr. Watt, who finished third, rode sitting up on a Swiss machine fitted with round spring runners. Mr. Child came over to St. Moritz with the intention of competing, but on viewing the course and noting the efforts of those who were trying to ride the new machine headfirst, he decided that he could not attempt it, and returned to Davos without even unpacking his machine. Experience has shown that his judgment was sound, and nobody has yet succeeded in taking an 'America' safely through the Church Leap under the conditions under which Mr. Child rode, lying on his side and steering with his mocassined foot.

Some remarks published in the 'Alpine Post'

about a fortnight before the race are amusing when viewed by the light of later knowledge :—

‘From what we have seen toboggans of the “America” type are not suitable for the Cresta run, the great speed and *comparative lack of control* making it impossible for the rider to keep his machine from hopping over the various turns and corners which, unlike the Buol run at Davos, are not banked sufficiently perpendicularly to prevent the toboggan leaving the course if so inclined.’ The italics are mine, comment is superfluous.

The first four in the race were as follows :—

	Name	Nationality	1st course	2nd course	3rd course	Total
			m. s.	m. s.	m. s.	m. s.
1	E. Cohen .	U.S.A., St. Moritz	2 12 $\frac{3}{5}$	2 14 $\frac{4}{5}$	2 12 $\frac{3}{5}$	6 39 $\frac{1}{5}$
2	H. Freeman .	English, Davos .	2 16 $\frac{2}{5}$	2 16 $\frac{2}{5}$	2 12	6 44 $\frac{1}{5}$
3	— Watt .	„ St. Moritz	2 16 $\frac{1}{5}$	2 17 $\frac{1}{5}$	2 14	6 48
4	— Rea .	„ Davos .	2 14 $\frac{1}{5}$	2 14 $\frac{4}{5}$	2 21 $\frac{1}{5}$	6 50 $\frac{1}{5}$

Fastest time : Mr. Freeman, 2 min. 12 sec.

The Cresta run this year was exactly one mile in length. Battledore and Shuttlecock corners were removed, giving place to a bold sweeping curve, taking the riders directly into the straight.

The year was also noteworthy for another step—the formation of the St. Moritz Tobogganing Club. So far Messrs. Badrutt had supplied all the labour for

building the Cresta run, and had borne all the expenses connected with it. On November 17, 1887, a meeting was held at which Messrs. Badrutt offered to hand over the management and use of the Cresta run to a committee chosen by visitors to St. Moritz, which should form the nucleus of a Tobogganing Club. The first committee elected consisted of four members—Duke Grazioli, Major Dwyer, and Messrs. Bulpett and Barker.

1888-9

The winter opened with discussions as to the respective merits of the 'America' and the 'Swiss.' On this subject there was an extremely interesting correspondence in the 'Alpine Post' between 'Cow-dear' and 'X. 1. L.' which lasted for some weeks. But the majority of tobogganers were already quite satisfied as to the superiority of the 'America;' the question which gave rise to most discussion was whether Americas should be allowed to compete on equal terms with the Swiss or whether the former type should be handicapped. Fortunately the advocates of progress carried the day and both in the International and Grand National Races it was decided to allow all classes of machines to compete on level terms.

Shortly before the International Race yet another complication appeared. Mr. S. Whitney introduced at Davos what is known as a Bobsled. This consists of two Americas, one in front of the other, connected together by a board on which the rider reclines. The front machine is fastened to the board in such a manner that it can be turned to either side according to the direction in which the rider wishes to travel. When asked whether this machine would be permitted in the International Race, the committee gave an answer in the affirmative. Mr. Whitney, acting upon this assurance, commenced practising on his Bobsled, and several other riders had similar machines constructed. But in the trial race to decide who should represent Davos, the Bobsleds beat all other types of machines so easily that a whole host of objections were lodged with the committee. Considerable discussion followed and eventually they decided that the Bobsled did not come under the heading of *a* toboggan, but was in reality two toboggans joined together. They further had the courage to retract their former decision, and refused to allow Bobsleds to compete in the race. This was severe upon Mr. Whitney and others who had gone to the expense of having such machines made and had wasted a good deal of time in practising with

them. But the authorities acted quite rightly, and deserve every credit for having had the courage to say that they were wrong in the first instance. As a matter of fact it did not affect the result, as Mr. Whitney was quite equal to the occasion, and detaching the front machine from his Bobsled he won the race upon it. The International Race was run on January 17 and resulted as follows :—

	Name	Nationality	Total
1	Stephen Whitney .	American, Davos .	min. s c. 6 28
2	{ W. H. Bulpett . .	English, St. Moritz .	6 41
	{ P. Minsch . .	Swiss, Klosters .	
4	H. Freeman . .	English, Davos . .	6 42

There were 22 competitors, and it is curious to note how slow men were to take to 'America' toboggans or the headforemost position. The winner rode an 'America' headforemost. Mr. Bulpett rode the same type of machine in the sitting position. Two other gentlemen rode 'Americas' and one rode a 'Swiss' with round spring runners. All the others still adhered to the ordinary Swiss coaster and the sitting position.

At St. Moritz on the other hand it was considered that there was no comparison between the two types,

and in a race on the Cresta run on January 26, all the 17 competitors rode 'Americas.' With one exception they all rode in the sitting position. The exception was Mr. H. W. Topham, who was making his first appearance in the sport at which he was to become so well known, and was enterprising enough to try riding headforemost. The results he obtained were not encouraging. In the first course his time was one of the slowest in the race. In the next two courses he fell.

The Grand National was run on February 22, and 15 out of the 18 competitors rode 'Americas.' Mr. Austin rode a Swiss with spring runners, but as he fell in all three courses it is impossible to say how such a machine would compare with an America. With one exception all the competitors rode sitting up. Mr. Vansittart, the winner, rode headforemost upon a curious machine appropriately called 'Nightmare,' which is described as a Canadian with spring runners, but which would equally come under the heading of a very low America.

The mile course of the previous year was now reduced to one of about three-quarters of a mile. Battledore and Shuttlecock corners were again introduced, and the general shape of the course was the same as it has been ever since.

	Name	Nationality	1st heat	2nd heat	3rd heat	Total
			m. s.	m. s.	m. s.	m. s.
1	Vansittart .	English, St. Moritz	1 35 ⁹ / ₈	1 35 ² / ₈	1 30 ⁴ / ₈	4 41 ³ / ₈
2	Cook .	" "	1 37	1 33 ³ / ₈	1 34 ¹ / ₈	4 44 ¹ / ₈
3	Butler .	" Davos .	1 44 ¹ / ₈	1 40 ³ / ₈	1 38 ³ / ₈	5 3 ³ / ₈

Fastest time : Vansittart, 1 min. 30¹/₈ s+c.

During the remainder of the year there were numerous races at both places, and it became more and more apparent that the headfirst position was superior to any other, and that no matter in what position it was ridden, the America could beat the Swiss over any course.

1889-90

This winter saw yet another change. The progressive party were determined that in the most important races there must as far as possible be no restrictions as to machine or position. On the other hand, the International Race had been started with a view to encouraging competition between the Swiss and other nationalities, and the authorities felt that under the new conditions the Swiss were bound to be at a disadvantage, and the intentions of the original promoters of the race would not be carried out. They eventually decided to meet the

wishes of both sides by holding two International Races instead of one.

At a meeting of the committee held on March 2, 1889, it was decided 'that in future the "Symond's Cup" shall be run for only on Swiss toboggans (known in the Davos valley as Handschlitten), and that another race shall be instituted for a shield (to be called the "Symond's Shield") which shall be open to any other type of single toboggan—provided it be approved of by the committee for the time being—and shall be held under the same conditions as the Symond's Cup.'

They still seemed to consider the 'position' of little importance, and Mr. Whitney took advantage of this to ride a Swiss headforemost in the Cup Race which was run on January 16. In this position he just managed to win by a second, but he was very near losing the race altogether, as he fell at the last corner and had to paddle in for the last fifty yards with his hands.

In the Shield Race next day Mr. Whitney again proved successful, winning with the utmost ease by twenty-three seconds. He was thus the first, and has so far been the only man to carry off both Cup and Shield in the same year, and under the revised conditions which render the sitting position compulsory

in the Cup Race, his performance is not likely to be repeated.

In this race there were sixteen competitors, of which five rode Americas headfirst and three sitting. One rode a Swiss with spring runners, and the remainder ordinary Handschlitten.

SYMOND'S CUP RACE

	Name	Nationality	Total
			min. sec.
1	Stephen Whitney .	American, Davos .	6 45
2	P. Allemann . .	Swiss, Klosters . .	6 46
3	H. Ammann . .	„ Davos . .	6 48

SYMOND'S SHIELD RACE

	Name	Nationality	Total
			min. sec.
1	S. Whitney .	American, Davos .	6 27
2	A. H. E. Wood .	English, St. Moritz .	6 51
3	P. Allemann . .	Swiss, Klosters . .	

The Grand National Race at St. Moritz was run February 15. It is worthy of note that not a single Swiss toboggan was ridden in the race, and that all the fourteen riders, with the exception of Mr. Freeman, rode headforemost. Mr. H. S. Mahony, the well known lawn-tennis player, was one of the competitors. He rode well, but destroyed any chance he

may have possessed by falling in the second heat. Efforts were made to induce Mr. Whitney to cross the pass, and show what he could do on the Cresta, but without avail. The times of the principal competitors were a great improvement on those of the year before.

	Name	Nationality	1st course	2nd course	3rd course	Total
			m. s.	m. s.	m. s.	m. s.
1	Towle . . .	U.S.A., St. Moritz	1 22	1 22	1 25	4 9
2	H. E. Forster	English, "	1 24	1 22 ² ₃	1 23 ¹ ₂	4 10 ¹ ₂
3	A. H. E. Wood	" "	1 24 ³ ₈	1 24 ³ ₈	1 24	4 13

Fastest time : Towle, 1 min. 22 sec.

1890-91

A new race was organised at Davos at the beginning of this winter, for the Buol Toboggan Cup, which it was hoped would become an annual institution : but the hope has unfortunately not been realised ; 1891 saw both its birth and death. The race was open to all classes of machines, and in order to give them all an equal chance they were handicapped as follows :--

Single or Double Bobsleds	.	scratch
Americas	10 séc. start
Swiss on spring runners	.	16 ,, ,,
Ordinary Swiss . .	.	20 ,, ,,



STEPHEN WHITNEY (U.S.A.)

Winner of International Cup Race, 1883 and 1889. International Shield Race, 1889

The ladies were handicapped to receive a start of five seconds from the men.

The race was run in two heats on the Clavadel road on January 27, and forty-two competitors started. This is the largest entry that has ever been received for a toboggan race in the Alps. Messrs. Freeman and Butler, riding machines of the ordinary Swiss type, tied for first place. They decided not to run off the dead heat, and drew lots for the Cup, which fell to Mr. Freeman.

The International Races were run on January 29 and 31. In the Cup Race the competitors were restricted to the sitting position, thus enabling the Swiss to ride the native toboggans with some chance of securing the prize. In the Shield Race the advocates of the headforemost position again scored a victory, but the winner rode on his side, and not in the prone position.

INTERNATIONAL RACES, 1891

SYMOND'S CUP RACE

	Name	Nationality	Total
			min. sec.
1	P. Allemann . .	Swiss, Klosters . .	6 17
2	J. Vetsch . .	English, Davos . .	
3	H. Freeman . .	Holland . .	
4	Van Kregten . .		6 24

The tie was run off with the following result :—
 Allemann 6'53. Vetsch 7'7. Freeman 7'8.

SYMOND'S SHIELD RACE

	Name	Nationality	Total	
			min.	sec.
1	G. Gouda Quint .	Holland . . .	6	12
2	— Douglas . .	English, Davos . .	6	22
3	— Mader . .	" " . .	6	30
4	Count Metternich .	Germany " . .	6	32

The Grand National at St. Moritz was run on February 10. There were only eleven competitors, all of whom rode Americas. With one exception they all adopted the headforemost position. Mr. Butler, a Davos representative who finished last in the race, will long be remembered as the last 'sitter' to ride in the Grand National. Mr. Chanler started a hot favourite, but after a grand race Dr. Patterson beat him by four-fifths of a second on the three runs. Perhaps the most remarkable thing about the race was that there was only three-fifths of a second difference between the first and fourth competitor after the first course.

GRAND NATIONAL RACE, 1891

	Name	Nationality	1st course	2nd course	3rd course	Total
1	Dr. J. F. Patterson .	U.S.A., St. Moritz	m. s. 1 27 ³ / ₈	m. s. 1 25	m. s. 1 24 ² / ₅	m. s. 4 17 ¹ / ₅
2	R. Chanler .	" "	1 27	1 27	1 24	4 18
3	W. H. Bulpett	English, "	1 27 ² / ₅	1 26 ³ / ₅	1 25 ³ / ₅	4 19 ² / ₅
4	— Douglas .	" Davos	1 27 ³ / ₈	1 27 ¹ / ₆	1 28 ¹ / ₆	4 23 ² / ₆

Fastest time: R. Chanler, 1 min. 24 sec.

Later in the year Mr. H. W. Topham scored his first win on a toboggan in a small race on the Lake run at St. Moritz.

1891-2

The winter of 1891-2 will long be memorable for the extraordinary series of successes achieved by Mr. H. W. Topham. Like Eclipse, it was a case of Mr. Topham first and the rest nowhere. During the early part of the winter he had little opportunity of showing his prowess, as the snow came very late. When the snow did come, however, it made up for lost time, and fell so persistently that the International Races had to be postponed again and again, and were eventually held in March. This was the only year in the whole series in which the Grand National was run before the International.

The Grand National, after several postponements owing to snow, came off on March 3, with the following result :—

	Name	Nationality	1st course	2nd course	3rd course	Total
			m. s.	m. s.	m. s.	m. s.
1	H. W. Topham	English, St. Moritz	1 31 $\frac{1}{2}$	1 29	1 32 $\frac{1}{2}$	4 32 $\frac{3}{4}$
2	L. Townsend	U.S.A., „	1 31	1 32 $\frac{1}{2}$	1 29 $\frac{1}{2}$	4 33 $\frac{1}{4}$
3	H. Freeman	English, Davos	1 34 $\frac{1}{2}$	1 31	1 32 $\frac{1}{2}$	4 38 $\frac{3}{4}$
4	R. W. Bird	„ St. Moritz	1 35 $\frac{1}{2}$	1 32	1 32 $\frac{1}{2}$	4 40

Fastest time : Mr. H. W. Topham, 1 min. 29 sec.

The winner rode a steel skeleton-framed toboggan ; all the other competitors rode the ordinary wooden Americas.

On March 5 another race took place on the Cresta run, and Mr. Topham again proved successful. On the afternoon of the same day he won yet another race, on the Double Lake run, known as Colonel Welchman's run.

The International Races at Davos were run on March 7 and 9. The Cup Race, as usual, was run first, and the three dead-heaters of the year before again occupied the first three places. In the Shield Race St. Moritz succeeded in beating Davos for the first time, Messrs. Topham and Elkington taking the first two places. The day was fine and frosty, and

the road gave every promise of there being a fast run. There is no doubt that Mr. Topham would have done the course some seconds faster, had not his course—as well as everybody else's—been impeded by a drift of snow which had blown over the road in the night for some fifty yards. The majority of the runners came to a standstill there, and had to run through the drift, carrying their toboggans. Some few, owing to the height of their machines, were able to go straight through ; Mr. Topham being specially fortunate, as he was riding a skeleton-framed toboggan, and so had no bars to catch the snow. He won with such consummate ease, however, that this fact cannot have affected the result. Mr. Topham was thus the first to perform the splendid feat of winning both the Grand National and the International in the same year, and it will probably be a very long time before anyone succeeds in imitating him.

INTERNATIONAL RACES, 1892

SYMOND'S CUP RACE (MARCH 7)

	Name	Nationality	Total
			min. sec.
1	Herr Vetsch . .	Swiss, Klosters . .	6 40
2	Mr. H. Freeman .	English, Davos . .	6 47
3	Herr Allemann .	Swiss, Klosters . .	6 58

SYMOND'S SHIELD RACE (MARCH 9)

	Name	Nationality	Total	
1	Mr. H. W. Topham	English, St. Moritz .	min.	sec.
2	Mr. R. W. Elkington	" " .	6	4
3.	Mr. Browne . . .	" Davos .	6	19
			6	20

The five years from 1888 to 1892 witnessed the sitting position gradually give way before the head-foremost position. The America at the same time supplanted the Swiss. Mr. Topham's victories in 1892 marked the beginning of yet another epoch—that of the steel skeleton-framed toboggan.

CHAPTER III

TOBOGGANING IN 1892-3 AND 1893-4

BY F. DE BEAUCHAMP STRICKLAND

THE author of this book has asked me to write a chapter on the tobogganing of the last two years. I feel some diffidence in doing so, as although always an interested and somewhat enthusiastic spectator, it is now many years since I was a practical tobogganer. Therefore I think it best to avoid technical detail and dogmatic assertion, and to treat the subject as a spectator rather than as an expert.

In reviewing the two winters in question, I have, as a spectator, to regret the death of the snow-run, and in doing so am giving expression to the sorrow of the non-tobogganing crowd. The last struggle for existence was witnessed on the village run at St. Moritz in '92-3. Before the end of that season, however, the whole course had to be so patched with 'polenta'¹ that it became an ice-run. Last winter not even an attempt was made to have a snow-course, and

¹ 'Polenta': a mixture of snow and water.

the village run became like the Cresta, iced from start to finish. The Buol run at Davos, and Mr. Dobson's private run at Davos Dörfli, are also watered freely, and ice has triumphed. This was an inevitable result of the increasing popularity of the sport, as the snow-course is quite unfitted for the wear and tear of the multitude. From a spectator's point of view, however, the snow-run is a lost friend. With a nice soft, bumpy, holey snow-course what splendid tumbles—more frequent than dangerous—warmed the enthusiasm of the onlookers! In the days of the sitting 'Swiss' a lurch, and a twist, and a head-over-heels fall in clouds of snow were to be seen every few minutes. Those were palmy days for the spectators. It was then some amusement to spend a morning on the Cresta or on the old Buol run at Davos. Now all this has changed. The runs are most carefully made, the proper angles of the banks are the subject of patient and abstruse calculations, the ice surface is kept as near perfection as possible, and should by any chance a rut or hole appear, it is mended at once and with as much care and science as a bad place in an asphalt pavement. As a result, falls are few and far between, and the race is to the speedy and skilled rather than to the fortunate. Tobogganers are delighted, but the spectator waits patiently for a good spill, and is often

sick with hope deferred. To avoid an imputation of brutality, I should remark that in the old days disasters, although frequent and amusing were, in proportion to their number, seldom serious ; while



The pleasures of 'a nice, soft, bumpy snow-course' \

nowadays, the falls, though few and far between, are not particularly pleasant to see, as the upset of man and machine on hard ice when going at thirty or forty miles an hour gives one more the impression of danger than of amusement. At the same time it must be recorded that serious accidents are of very rare occurrence, as the rider in the headfirst position has such a firm grip of his machine, and is

so near the ice, that he is much better able to avoid the dangers of a fall than when sitting up in the old style. Some will point out that very serious falls occurred in the old days, which is perfectly true, but they were to be attributed to the sitting position rather than to the snow-run. If to-day 'sitting' were the favourite position on our ice-runs, I am sure accidents would be more frequent and serious than at present.

As the ice-run has become supreme during the last two years, so has the skeleton steel toboggan (invented by Mr. W. H. Bulpett) ousted all rivals. A certain place I wot of is at times stacked with old Swiss toboggans, which have a melancholy air of neglect. Some bear names that only a few years ago were on the lips of all interested in the sport and were talked of even as a Ladas or an Isinglass. Now they have but a musty flavour and are degraded to the burden of merchandise or to the use of some decrepit or unambitious tyro in the art. Even as an erstwhile famous racehorse breaking its heart in a London cab is a sight to draw tears, so are the broken fortunes of an old Swiss toboggan, once noted for its speed and trueness of run, sufficient to invoke a platitude of the 'dolly made of sawdust' type. As with the old Swiss so with its successor, the solid

wooden walled 'America,' and now the steel 'skeleton' holds the market. How long it will continue to do so is difficult to say, for each year many minds are at work and much money is spent in improving the toboggan as a racing machine.

While the runs have improved in their making and the toboggans in their building, tobogganers have advanced in the art of riding. Particularly has this been shown in the two winters under notice. In the old days comparatively little attention was paid to the necessity of suiting the machine to the physical characteristics of the rider; now, however, the crack riders study the measurements of their toboggans in the most minute detail.

Although in this matter tobogganers have advanced they have in another retrograded. I refer to the studying of the run on foot, which since driving up the road in sleighs has obtained, is now very much neglected by the majority. On this point I cannot do better than quote from a letter of Mr. W. H. Bulpett. He writes—"For the last two years I have been continually warning competitors to study the course on foot, which in these days of sleighs bringing up toboggans and their riders has been much neglected. It has also led to very few people becoming good judges of "form." Everything

now is left to the man with the chronograph, which, I hold, is not all-sufficient as a test of the best man. I mean that a man's "form" is not sufficiently seen on his way down the course, nor is the course sufficiently known to the competitor, as he will not take the trouble to walk up.'

The winter of 1892-3 was not very propitious for tobogganing, as the heavy snow came very late—in fact, sufficient snow to make the 'Cresta' did not fall until January 25. The International Toboggan Races at Davos were not run until February 25 and 27, instead of about the middle of January, and the Grand National Toboggan Race at St. Moritz was not run until the third week in March instead of about the middle of February. The number of smaller races prior to these events was very limited, and I do not think there was anything about them worthy of remark.

INTERNATIONAL RACES, 1893

SYMOND'S CUP RACE (FEBRUARY 24)

	Name	Nationality	Time
			m. s.
1	J. Vetsch . . .	Swiss, Klosters . . .	6 39
2	P. Allemann . . .	" " . . .	6 54
3	A. Minsch . . .	" " . . .	7 8

SYMOND'S SHIELD RACE (FEBRUARY 25)

	Name	Nationality	Time
			m. s.
1	C. Coke	English, Davos . . .	5 58
2	G. Gouda-Quint . . .	Holland	6 1
3	R. W. Bird	English, St. Moritz . .	6 3
4	W. Wilbraham	„ Davos	6 5

The International Toboggan 'Shield' Race does not call for any detailed notice. Perhaps the most noticeable feature of it was that the winners of that event in '90-91 and '91-2, viz. G. Gouda-Quint and H. W. Topham, competed and only obtained second and eighth places respectively. The winner, Clement Coke, rode a long American type machine sideways, which method of riding had once before won this race. It has not, however, at present, been found successful on the Cresta course. In the Grand National, which was held at St. Moritz on March 18, there were several old competitors who had taken prominent places in previous races, viz. Bulpett, Bird, Elkington, and Topham, the winner of the year before, and Foster, who was second in 1890.

GRAND NATIONAL RACE (MARCH 18, 1893)

	Name	Nationality	1st course	2nd course	3rd course	Total
1.	Hon. H. Gibson	English, St. Moritz	m. s. 1 32 $\frac{3}{8}$	m. s. 1 29 $\frac{1}{8}$	m. s. 1 30 $\frac{3}{8}$	m. s. 4 33 $\frac{1}{8}$
2	C. H. Cousens	" "	1 32 $\frac{1}{8}$	1 29 $\frac{3}{8}$	1 30 $\frac{3}{8}$	4 33 $\frac{1}{8}$
3	F. de Planta	Engadine	1 32 $\frac{3}{8}$	1 32	1 30 $\frac{3}{8}$	4 35 $\frac{1}{8}$

Fastest time: Cousens, 1 min. 29 $\frac{0}{8}$ sec. Gibson and Cousens tied for first place. On running off the tie Cousens fell, and Gibson walked over in 2 min. 1 $\frac{3}{8}$ sec.

In consequence of the race being run so late in the season, the run was only in fair condition, and towards the end of the racing it became appreciably slower. On the total of the three courses it was found that H. Gibson and Cousens had tied for first place. On the tie being run off, Cousens fell and thus left Gibson to walk over and to win the race. There is no doubt that the victory of Gibson was unexpected, and it was certainly a most creditable performance for a rider of only one season's experience. In consequence of the late snow-fall comparatively little practice had been obtained on the Cresta run, and the difficulties of competitors were increased by the fact that only the day before there had been a heavy snow-fall, consequently none of the competitors knew much about the state of the course. There is no

doubt that Gibson won by using, to the full, what time there was on the morning of the race, in studying the peculiarities of the run, and so was able to ride with great judgment.

In 1892-3 the St. Moritz Tobogganing Club instituted a silver challenge bowl, which has to be won three years following to become the absolute property of the competitor.

Another element of the winter was the increasing popularity of the Canadian toboggan, greatly due to the persistent way in which Lady Archibald Campbell and her daughter rode these machines and showed that they could be steered with accuracy down an ice-run. Although they are considerably slower than the American type machine, they find favour with many who prefer the side position of riding. At Davos Mr. Dobson again showed his generous enthusiasm for the sport and made his run for the second time at Dörfli. The chief thing to be said is that several ladies there took up the sport with great vigour, and continuing during the winter of 1893-4, have certainly gone ahead of the fair sex at St. Moritz.

The winter of 1893-4 was a first-rate one for tobogganing, as there was plenty of snow comparatively early in the season. The most noticeable feature in the tobogganing world of St. Moritz was

the development of the village run. For some years past this has afforded mild amusement to tobogganers. As I have before said, in the latter part of the season of 1892-3 it was iced, and in consequence of the small amount of snow at the sides was in a very dangerous condition. At the same time it was exceptionally fast, and afforded good practice for the Cresta. Last season the Kurverein took the matter up vigorously, and quite early in the season made an excellent ice-run. Thus a large number of races were able to be organised both by the Toboggan Club and by individuals. These were very popular and successful, and afforded the most valuable practice for the Cresta.

To have a double run has been the ambition of tobogganers for some years past at St. Moritz. This was accomplished last winter when a straight double run was made on to the lake. The day after it was opened snow fell heavily, and it was not used until the end of the season. In the month of March the run was dug out, and afforded much amusement. It must be remembered, however, that with whatever care a double run is made, it is impossible to make both courses exactly the same, and consequently one will always be a little quicker than the other, thus preventing the decision of races by heats of two,

without timing. I must not forget to mention that '90-91 Colonel Welchman at St. Moritz made two runs side by side from the Villa Flugi to the lake, but not being straight, and moreover being very uneven, the times of the two runs were not even approximately the same.

Another element which has developed in an extraordinary way during the winters in question is the constant clocking of riders during practice. I am not sure that it is an unmixed advantage, as an intimate knowledge of the best time of each competitor cuts both ways in the matter of interest in the race. Thus every day the times made by those who were considered the best tobogganers were bruited abroad, and led to very considerable discussion on the daily form of each tobogganer. Perhaps, on the whole, it increases the interest in the sport, and fortunately a good tobogganer like a good horse has his off days, and consequently there is always a considerable amount of uncertainty as to the result of the race. The Symond's Cup Race of this season was noticeable as being the first occasion since Mr. Guthrie's win in 1886 that the event was won by an Englishman.

INTERNATIONAL RACES, 1894

SYMOND'S CUP RACE (JANUARY 18)

	Name	Nationality	Time
			m. s.
1	G. P. Humphrey .	English, Davos .	6 43
2	G. Pardoe .	" " .	6 49
3	J. P. Hitz .	Swiss, Klosters .	6 53
4	W. Salter .	English, Davos .	7 1

SYMOND'S SHIELD RACE (JANUARY 22)

	Name	Nationality	Time
			m. s.
1	Hon. H. Gibson .	English, St. Moritz .	5 7
2	H. W. Topham .	" " .	5 15
3	R. Wilbraham .	" Davos .	5 18
4	W. Gouda-Quint .	Holland .	5 24

The International Shield Race was run on January 22, and won easily by Gibson, who beat Topham by 8 seconds, and made the record time of 5 minutes 7 seconds. The previous record was in 1886, when Baillie-Guthrie won in 5 minutes 47 seconds. Upon that occasion the course was the same—viz. between Grüne Bödeli and Klosters—and was very quick, as a heavy thaw and rain the day before, followed by a hard frost at night, had turned the road into an ice-course. A well-known authority has pointed out to me that the most icy course is not always productive

of the fastest times, as there is a point at which increased iciness leads to skidding on the part of the machine, and consequently detracts from the pace. It is noticeable that both Gibson and Topham had given a great deal of attention to the question of a suitable toboggan for the course, and took over several machines from St. Moritz, so as to be ready for all emergencies.

In a race on the Cresta on February 8, Topham won from Gibson by three-fifths of a second on the three courses, although had the latter not made a mistake in the first course the result would probably have been different. As it was the next best men were over nine seconds behind Gibson's time.

It may be noted that in the race Gibson in his second course beat all previous records by covering the course in 1 minute $13\frac{2}{5}$ seconds.

During the fortnight preceding the Grand National at St. Moritz the clocking of the competitors was done with the utmost regularity, so that the public had very reliable information upon which to judge the merits of the various competitors. In the practice before the race Gibson and Topham were considerably ahead of all other competitors. Day by day they reduced their times, Gibson always having a bit in hand. The race was won by Topham by $2\frac{1}{5}$ seconds

from Patterson. The latter, an old winner, had come out late in the season, and so was short in his practice. As it was he rode his last course in very fine style, and won the fastest time prize. With more practice he might have pushed the winner very close. At the same time Topham rode a careful and well-judged race, and certainly could have reduced his time a little, although it would naturally be at the cost of increasing the danger of a fall. Gibson had unfortunately hurt his foot during practice a few days before the race, and he went down the course with his ankle in a bandage. It cannot be doubted that this affected his prospects of winning. He fell in the first course, and thus quite destroyed his chance, and again demonstrated the uncertainty of the sport.

GRAND NATIONAL RACE (FEBRUARY 21, 1894)

	Name	Nationality	1st course	2nd course	3rd course	Total
			m. s.	m. s.	m. s.	m. s.
1	H. W. Topham	English, St. Moritz	1 15 $\frac{1}{2}$	1 14 $\frac{4}{5}$	1 15 $\frac{1}{5}$	3 45 $\frac{1}{5}$
2	J. F. Patterson	U.S.A., "	1 17 $\frac{3}{5}$	1 15 $\frac{2}{5}$	1 14	3 47 $\frac{2}{5}$
3	C. H. Cousens	English, "	1 16 $\frac{3}{5}$	1 15 $\frac{1}{5}$	1 15	3 48
4	R. Pulitzer	U.S.A., "	1 16 $\frac{3}{5}$	1 16 $\frac{3}{5}$	1 15 $\frac{1}{5}$	3 48 $\frac{1}{5}$

Fastest time : Patterson, 1 min. 14 $\frac{2}{5}$ sec.

In the ladies' race on the 'Cresta' run Miss E. Parry won easily, all the other competitors falling.



Hon. H. Gibson

E. Cohen

H. W. Tojiban

J. F. Patterson

G. B. Guthrie

A GROUP OF WINNERS

In the ladies' race on the Village run Mrs. Maclaren, of Davos, won.

The times on the 'Cresta' run during this last winter were very considerably quicker than had ever been made before. This was doubtless partly due to the increasing attention to details which the crack riders are giving to the sport, but chiefly to the fact that the run had never before been made in quite the same place, the chief difference being that all the rocks were removed below the 'Stream Corner,' thus enabling a better 'straight' to be planned, and that an improvement had been made after coming off 'Bulpett's' Corner. These two points having been much improved, the tobogganer was brought to the 'Cresta Léap' much faster than ever before. These improvements were due to Mr. W. H. Bulpett, who, as usual, engineered the run, and who has certainly done more for tobogganing in St. Moritz than any other man ; and I must take the opportunity of referring in the warmest terms to the skill, energy, and patience which year after year he brings to bear on the making of the runs. The result has been the production of a run of which St. Moritzers may well be proud. For it is no idle boast to say that with its serpentine course and banked corners the Cresta stands absolutely unique in the tobogganing world.

CHAPTER IV

TOBOGGAN RUNS

TOBOGGAN runs — or slides, as they are called in America — may be divided into two classes, natural and artificial runs.

By far the most important natural run in the Alps is the Klosters road, near Davos, upon the last two miles of which the International Races take place each year. Klosters is a small village situated some seven miles from Davos. In past years, before the Davos-Landquart Railway came into existence, tobogganers practising for the races used to leave Davos in sleighs, drive to the top of the course, and then toboggan down to Klosters with their sleighs following behind. They would then drive or walk up to the top again, and repeat the performance. It was no uncommon thing for a keen rider to spend the whole day practising in this manner, and return to Davos late in the evening — tired, no doubt, but having learnt a great deal by his day's toil. With the introduction of the

railway, however, a fit of laziness seems to have come over the tobogganing world, and the practice of to-day is a very different affair to what it was a few years ago. Now a keen tobogganer feels quite satisfied with himself if he is up in time to catch the nine o'clock train to Wolfgang, a little hamlet some three and a half miles off. From here he toboggans and walks by turns to the top of the run, where most men halt and have a short rest before going for their practice spin down the course. The run down to Klosters takes from $5\frac{1}{2}$ to 7 minutes, according to the state of the course, and then there is just time to walk about two-thirds of the way up again, and so get another run down the last part of the course before catching the train which takes him back to Davos in time for lunch. This is very different to the all-day practice which used to be considered necessary, but I am not sure that the practice of to-day is not the best after all. In road tobogganing, as in other forms of athletics, one may easily overdo it and become stale; for, whether racing or merely practising, tobogganing on this road, as is shown later, becomes a severe athletic exercise, if a man really tries to do himself justice and get to the bottom as quickly as he can.

The course used for racing is 160 yards under two miles long, with a fall of 860 feet. The start is at

Grüne Bödeli, and the finish is in the village of Klosters. It is not easy to give a description of it, as, unlike the ice-runs, few of its chief features have names. Suffice it to say that there are three very difficult corners, three or four others which are sharp without being very difficult, and innumerable lesser curves, which are a source of constant trouble to those who would make a fast course. The worst corner is what is known as 'the last corner but one,' where the road forms an elbow and turns right back upon itself. The 'Bridge' corner, about $\frac{2}{3}$ mile from the start, is also very troublesome ; and the last corner of all has a convenient drop of some 6 feet on the outside of the curve to catch the unwary. None of the corners are banked or interfered with in any way, though the authorities do their best in various ways to get the course into as fast a condition as possible the night before a race.

Some four or five years ago, when the Buol run at Davos was in its zenith, it was suggested that the venue of the International Races should be changed from the Klosters road to the artificial run. There were several reasons adduced to show the advisability of this change. The artificial ice-run was close at hand, while the Klosters course was several miles off ; the timing on the Buol run would be more reliable ;

the run was more popular, and so on. But the authorities stood firm, and continued to hold the International Races on the course which had been originally chosen for the purpose. It was a wise decision, as under present conditions the International



The 'Last Corner but One' on the Klosters Road

Shield Race practically carries with it the 'road-riding championship,' while the winner of the Grand National at St. Moritz is looked upon as the champion rider upon ice. Road-riding and ice-riding are two essentially different arts, and under the present conditions it is very difficult for the same man to win

both races in any one year. In fact, since their foundation the feat has only been performed once—by Mr. H. W. Topham in 1892 ; whereas, if both these races were run upon ice-runs, the double win would become comparatively common.

The Clavadel road, near Davos, has only once been used for the International Races—in 1888. It has the advantage of being steeper, and consequently faster, than the Klosters road, while some of the corners are both difficult and dangerous enough to satisfy the most exacting tobogganer. The principal objection to it is that it is not long enough for a road course, the only part steep enough for racing being 50 yards short of a mile. Being within three miles of Davos, this road is a very popular run in December, when it is not uncommon for large parties to be made up to drive over to Clavadel for lunch, and indulge in some mild racing afterwards.

Natural runs also include the post roads over the passes ; but as races rarely, if ever, take place upon them, there is no need to make further mention of them here.

The ‘duffers’ runs’ which make their appearance regularly at the beginning of every winter might also be classed under the heading of natural runs. They seem to spring up like mushrooms in a night, and

are to be found literally everywhere. In fact, so numerous are they that one might almost put it in the form of an equation :

$$1 \text{ Duffer} + 1 \text{ Snow-slope} = 1 \text{ Duffer's run (till he or she gets tired of it).}$$

ARTIFICIAL RUNS

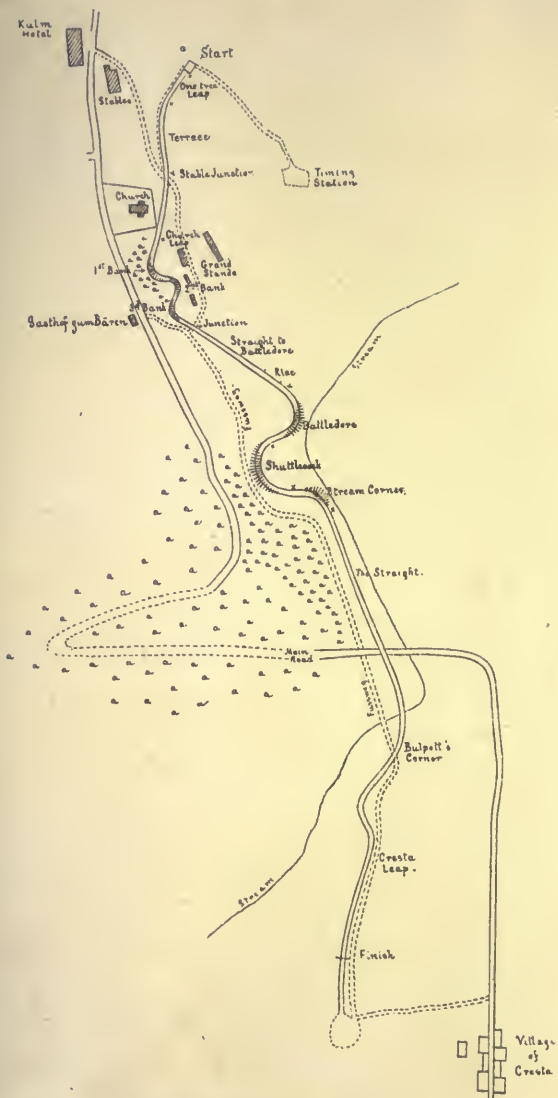
First among artificial runs stands the Cresta run at St. Moritz. There is no other run within measurable distance of it, none which can show anything approaching that happy combination of pace and difficulty for which this run is noted.

It owes its superiority to many circumstances. The gully down which it runs is in many places sheltered from the fierce rays of the sun. The famous Church Leap is not a difficulty which any man would have been likely to have invented if the conformation of the ground had not suggested it to him. Further, without a natural supply of water it would not be possible to make or carry on the run ; the expense of icing and repairing would be too great. But, fortunately, a small stream wanders down beside the Cresta for the last two-thirds of the course, and in the autumn of 1893, by the kind permission of Messrs. Badrutt, the main of the Kulm Hotel was tapped and

the water brought down to the Church Leap in deep-laid pipes. A hose was also purchased for spraying water over the lofty banks of the Leap, so that the water arrangements are now all that can be desired.

Notwithstanding these natural advantages, the run might never have attained to its present proud position but for the ability and perseverance of its engineer, Mr. W. H. Bulpett, the president of the St. Moritz Tobogganing Club. This gentleman was one of the committee who started the Grand National Race in 1885. He was one of those who, working under Mr. G. P. Robertson, made the Cresta run for the first time in that year ; and every year since then, with the exception of the winter of 1891-2, it has been marked out and engineered by him. Each year he has gained more experience ; each year the run has been growing more perfect, until in 1894 it was as near perfection as we can ever hope to see it. The extraordinary times made upon the Cresta in that year may have been partly due to improved methods of riding, but they were mainly owing to the manner in which the run was constructed, the corners being banked at exactly the right slope and every curve absolutely true.

The annexed plan, and the various photographs of the run which will be found throughout this work, will



Rough Plan of the Cresta Run

give a better idea of the appearance and nomenclature of the Cresta run than any words of mine could do. It is, with very slight alterations, the same course as has been in use since 1889, the total length being 1,400 yards, and the fall from start to finish 500 feet.

The present shape of the run is probably the best that the conformation of the ground will permit of. There are many, however, who would like to see the length extended to exactly one mile, as it was in the winter of 1887-8. There is something to be said in favour of this proposition. It would be easier to compare the times made over a mile course with those made in other sports than is the case with the three-quarter mile course. The mile always seems to be the popular standard for comparison of times. But the expenses of construction are very heavy, and the run, even under present conditions, takes over six weeks to build, so that the addition of an extra quarter of a mile would not be an unmixed blessing. It must be remembered, too, that without this addition the Cresta run is twice as long as any other artificial run in the world. In the Badminton Library on 'Tobogganing' will be found a description of two of the principal slides in Canada. The length of the slide of the old Tuque Bleue Club is given as 1,300 *feet*, while that of the slide at Orange is only

1,000 *feet*. None of the lesser runs of the Alps are over 700 yards in length, while that of the Cresta is 1,400 yards. The Cresta, then, would seem to be quite long enough to satisfy most people, and it may be well to pause before trying any further experiments with it.

The run is built each year under the direction of Mr. Bulpett by twelve picked men, assisted by whatever amateur labour is forthcoming. Early in November, before the snow falls, the course is carefully marked out with sticks. Various improvements in the ground are also made at the same time. Rocks which have been found dangerous in previous years are blasted away, straights are levelled, and small banks built to assist in the proper formation of the corners ; then when sufficient snow (one foot at least) has fallen the actual process of construction begins.

The run is built upwards from the bottom and is opened section by section as each is finished, so that those who have never been down it before can learn the various difficulties one by one as the run gradually increases in length.

I am indebted to Mr. T. A. Cook, the secretary of the St. Moritz Tobogganing Club, for the following notes on the construction of the Cresta in 1894 :

‘Four men link their arms and taking the line

from their leader, walking laboriously through the deep snow, they tramp steadily along the line staked out, going several times over the same tracks, and with their heavy Engadine boots swathed in coarse bandages, trample down the snow for the night's frost to harden. After this the worst of the inequalities are filled up with snow from the sides and stamped in ; the banks are thrown up roughly and left to harden in the frost, and they too are trampled down by the men's feet. The first stage is over and a rough sketch of at least the lower part of the run is completed ; sometimes almost the whole of it is thus rudely trampled down to indicate the future course more clearly. Sticks here and there increase and multiply and the second stage begins. The trampled snow is beaten into a still firmer consistency by great wooden shovels to the exact shape of the run required ; the corner-banks previously thrown up in the rough are carefully carved out to what seems then to be the proper angle, care being taken to make them rather too small and flat than too large, for it is far easier to add snow to an iced bank than to cut into the already hardened surface.

'The personal trials of the engineer now really begin. On his toboggan at a suitable rate of speed he tries each corner to verify the absolute correctness

of the curve. The number of falls necessary to the perfection of "Bulpett's Corner" alone must prove no slight test of the endurance of its creator. But the thing must be done, for perfect as the corners may be in theory, there seems to be always that same uncertain factor here that will produce such different rates of speed in two twin toboggans built on the same lines yet with essentially different results. These trials must be gone through too to ensure the correctness of the banks, *before* the icing process has begun, for alteration at a later period involves incalculably greater labour.

'So having got the required angles by actual practice, and leaving theories later on to prove his why and wherefore, the engineer proceeds to his third and last stage in creation. The run is thoroughly well watered throughout its length and breadth, and the pasty snow thus produced is again beaten hard and level with the workmen's shovels after the last finishing touches have been given, and left ready for the frost to harden all. The result is an even surface of hard solid ice, still further improved in some places by being sprayed over with a hose.'

It will be noticed that in spite of the great strain thrown upon the banks, it is not considered necessary to build them of a solid mortise of snow and water.

They are always repaired with a mortise of this kind, but in the first instance they are built of snow and iced on the surface. In the case of banks facing south such as 'Battledore' and Bulpetts Corner this surface of ice is made two or three inches thick, which is found to resist the action of the sun quite as well as a solid ice-bank would do.

It is of great importance that those portions of the run which are exposed to the sun should be kept absolutely clean. Any grit or particles of sand left on the ice attract the sun's rays at once and assist its wearing action on the run.

The next artificial run we have to deal with is the Buol run at Davos. The footpath, upon which the run was originally built, was probably used for tobogganing in the seventies. But the first attempt at banks was made in the winter of 1881-2, when the 'Chalet Corner' and the 'Hotel Corner' were both roughly banked to help toboggans round them. At this stage, however, no part of the run was iced.

In the winter of 1885-6 the Buol Toboggan Club was formed for the purpose of making a proper run from the Hay Chalet to the Buol Hotel. The first committee consisted of Mr. H. Freeman (president), Major Dwyer, and Mr. Roddam. That year and for many years afterwards the run was engineered by

Mr. Freeman, who filled the same position at Davos as Mr. Bulpett did at St. Moritz.

During the latter part of December 1885 the whole run was opened and got into good order between the Hay Chalet and the Schatz Alp path.



The old Buol Run, Davos

The course was taken as straight as possible to avoid the awkward turnings of the natural path. At the crossing of the Schatz Alp path a high bank was thrown up and the run was taken across the path and round into the meadow, joining the Schatz Alp path

again some fifty yards below the crossing, enabling tobogganers to run round at nearly full speed. A very high bank was also thrown up opposite the Villa-am-Stein, and where the run crossed the stable road into the meadow, a bridge was built to save labour in drawing snow to the embankment. In 1887-8, owing to the new addition to the Buol Hotel, the course of the run had to be changed, and instead of being brought down through the meadow close to the Hôtel Buol it was carried over the meadow round the Villa-Am-Hof, finishing in the road leading up to the hotel. The club were thus enabled to get a clear half-mile course and a very good finish. The course too was straightened down to the stables, doing away with the Circular and Chalet corners, and affording a separate pathway the whole way up to the top.

During the summer and autumn of 1889 the whole of the run was widened under the superintendence of General Haig and Mr. Freeman. Further changes of considerable importance were made at the same time. The previous year the bridge which connected the run where it crossed the stable road with the meadow was the scene of many falls. To avoid a recurrence of these mishaps, and also a certain amount of danger in having to cross the road where horses and sleighs were constantly

passing up and down, a new track was laid down, leaving the old one about fifty yards below the Schatz Alp path, and running behind the Buol stables into the meadow at the back, passing between Mr. Symond's and General Haig's houses. The total length was increased to about 1,000 yards. In 1891-2 the Buol run was not made owing to the late snowfall. In its place a new run, called the 'Double run,' was made in the meadow behind General Haig's house ; 320 yards straight, then a long curve of about 80 yards, and another straight of some 80 yards into the main road near the bridge between the Hôtel Angleterre and Dörfli.

Unfortunately the land upon which the Buol run has always been constructed is the most eligible building site in Davos, and of late years the Buol Club have been at their wits' end to prevent their run from being built out altogether. First a house was built right across the centre of the old run. Then, in 1894, the club selected a fresh site, and constructed a run some 700 yards long, with a fall of about 150 feet. Now this, too, is being built over, and it looks as if this once famous run must cease to exist unless some suitable place is found for it at the other side of the valley.

There is yet another artificial run at Davos which

tobogganers owe to private enterprise. Mr. H. Verner Dobson, who has resided there for some years, has for the last two winters engineered a run at Davos-Dörfli which is very fast, and has provided



The Leap, Buol Run, Davos, 1890

endless amusement. In 1894 the length was 500 yards, with a fall of about 200 feet. It had one leap, and was almost quite straight. The new departure proved very popular, as was shown by the large

attendances at the numerous races which were held there during the season.

At St. Moritz the Club makes another artificial run besides the Cresta—the Lake run. It has scarcely ever been built of the same shape for two consecutive years. In 1893-4 it was a double run, and perfectly straight, with two leaps. The length on the slope was 250 yards, and then it was carried across the lake for a distance of 650 yards on the level. Unfortunately repeated snowfalls and the packing of the lake ice directly across the track compelled the authorities to close the run after it had only been open for two days, and they were not able to reopen it until close to the end of the season. In future years it may be well to consider whether it is advisable to construct a run like this which is absolutely at the mercy of the weather, and may, owing to circumstances over which the authorities have no control, remain useless for the greater part of the winter.

The Village run at St. Moritz is built each year by the Kurverein. For the last two years it has been banked and iced, and is now an excellent run for beginners to learn upon. The length is 700 yards, and the fall about 150 feet. It is always open earlier than any other run, and so is the main centre of tobogganing at St. Moritz during the first part of the season.

CHAPTER V

TIMES AND TIMING

AT all times and in all ages rapid motion through the air has had an irresistible attraction for man. The English-speaking race in particular has always been remarkable for its desire to move fast, even when time is no object. In the rush and hurry of this latter end of the nineteenth century one would think that men would turn for recreation to pursuits of a quiet, restful nature. But this scarcely seems to be the case. Hunting and other sports of a similar kind have lost little of their popularity. Horse-racing, running, cycling, and rowing are, if anything, growing in public estimation. This love of rapid motion explains in a great measure the popularity of tobogganing. The pace, the sensation of flying through the frosty air, is one of its great charms. Pace, however, is not the sole consideration. If it were, in the Alps, as in Canada, straight runs would be the rule and not the exception. But the pace of the toboggan, which far exceeds that attained at any other sport, is undoubtedly one of its principal attractions,

and in building the winding ice runs each year, their designers endeavour as far as possible to make them faster without reducing the skill necessary for riding the corners.

A comparison of the pace attained in different sports is always interesting, but we cannot fairly compare tobogganing with anything else. It is true that in tobogganing pace depends to a great extent upon strength, activity, and skill, but not quite in the same sense as in other sports. In cycling, running, rowing, or kindred sports man moves by his own muscular energy; if he ceases to exert himself he stops. In tobogganing, on the other hand, the rider may relax every muscle in his body without affecting the pace. There is consequently no advantage in comparing the rate of speed attained in tobogganing with that of any other form of rapid motion. But it is possible and interesting to institute comparisons between the various speeds attained in the various forms of tobogganing itself.

To begin with—how does tobogganing on crooked runs compare with tobogganing on the straight chutes of Canada? Take the Cresta, the pride of the Alps—how will it bear the comparison? If we take the average of miles per hour over the whole length it will not bear the comparison at all. But if we take

the highest rate of speed attained in the 'straight,' and compare this with that of the Canadian slide, the Cresta holds its own. On a Canadian slide the greatest speed of which I have been able to obtain authentic information is 80 miles an hour. I write this open to correction, as my means of obtaining information on the subject are somewhat limited; but, after having taken considerable trouble to find out all about it, this is the greatest pace that I can hear of.

On the Cresta run in 1894 Mr. Topham was timed by Mr. C. H. Cousens to cover 200 yards, measured from the Stream Corner to Bulpett's Corner, in $5\frac{1}{3}$ seconds, or at the rate of 70.5 miles an hour. But it is well known that in 1894 the pace increased steadily all the way from the Stream Corner to the winning post, and if the time had been taken over the last 200 yards of the course it would have been found considerably faster. It is not going too far, then, to assert that down the Cresta Leap the pace must have at least equalled the 80 miles an hour of the Canadians. For the present this point must be left as doubtful, though it is to be hoped that it will be settled shortly by more exhaustive experiments. All we can be sure of is that the greatest pace attained on the Cresta is much

THE ROCKING-HORSE RACE



closer to that of the Canadian chutes than is usually supposed.

To turn to a comparison of the times made in different years. It is the fashion to say that it is not fair to compare them, but one comparison is certainly fair—the times made in different years over the same straight piece of the same run. Such a comparison is fortunately possible in the case of the Cresta straight.

In 1887 Mr. Cornish, riding a Swiss coaster headforemost, was timed to cover 200 yards down the Cresta straight in 10 seconds. This gives us a speed of 40·9 miles an hour. In 1893 Mr. Forster, riding a wooden America headforemost, covered the same distance in 6 seconds, or at the rate of 68·5 miles an hour. In 1894, as has already been shown, Mr. Topham, on a steel skeleton, covered the same distance in $5\frac{1}{3}$ seconds, or at the rate of 70·5 miles an hour.

From these times it is apparent that the improvement in pace during the last eight years has been very great. From the 40 miles an hour of Mr. Cornish on his Swiss to the 70 miles an hour of Mr. Topham on his skeleton is a great step. This increase of speed is owing to several things. The run is better made than it used to be ; there have been many improvements in toboggans of late years ; and lastly, the methods of riding are improving every year.

When we come to compare the times made over the whole course we naturally find that the average of miles per hour has shrunk greatly. This is inevitable owing to the many difficulties in the earlier portions of the run, but still we find the same distinct improvement from year to year. In the following table I have taken the fastest authenticated time of each year of which the record has been preserved. In the majority of instances this is the fastest single course made in the Grand National Race.

COMPARATIVE TABLE OF TIMES ON THE CRESTA RUN

Date	Machine and position	Length of run	Time	Average of miles per hour
		yds.	m. s.	
1885	Swiss. Sitting	1,320	1 42	26'49
1886	" " "	1,320	1 31 ³ / ₄	29'54
1887	" " "	1,650	1 58 ³ / ₄	28'45
1888	" " "	1,760	2 12	27'27
1889	Canadian, " with spring runners. Head first	1,400	1 30 ³ / ₄	31'6
1890	America. Head first	"	1 22	34'9
1891	" " " " " " " " " "	"	1 24	34'09
1892	Skeleton-framed " America. Head first	"	1 29	32'1
1893	America. Head first	"	1 18 ³ / ₄	36'5
1894	Skeleton-framed America. Head first	"	1 13 ³ / ₄	39

From this it will be seen that the improvement in pace has been steady and continuous. In the ten years during which the Grand National Race has existed, the average pace has increased by 12½ miles

an hour. A great deal of this increase is undoubtedly due to the improvements in making the Cresta run. This fact is established by the comparatively slow time made in 1892. That was the only year in the whole series in which the run was not made by Mr. Bulpett, and while every credit must be given to those gentlemen who worked so hard to fill his place, they were yet unable to build the run either fast or true. The result was slow times. But leaving out that year we find such a persistent increase in pace, more particularly in the last two years, that it is evident that the sport of tobogganing has been steadily improving all round. Whether this increase in pace will continue or not, the future alone can tell.

When we come to compare the pace of the different runs, we find that for average pace over its entire length Mr. Dobson's run at Davos heads the list.

COMPARATIVE TABLE OF THE FASTEST TIMES MADE ON
DIFFERENT RUNS IN 1894

	Name of run	Length	Time	Average of miles per hour
		yds.	m. s.	
1	Mr. Dobson's run, Davos . .	500	25	40'9
2	Cresta run, St. Moritz . .	1,400	1 13 $\frac{3}{4}$	39
3	Buol run, Davos . .	670	43 $\frac{1}{2}$	31'7
4	Village run, St. Moritz . .	700	46	31'1
5	Klosters road, Davos . .	3,360	5 7	22'4

The Lake run at St. Moritz is one of the fastest runs at either place, but unfortunately no times were taken down it in 1894 until very late in the season when the run was soft and slushy. The times taken then would not give a fair idea of the pace of the run, so I have omitted them.

TIMING

In tobogganing, unlike most other forms of racing, it has been found impossible to arrange matters so that two men can race down side by side. If they were to do so on the same run there would certainly be a collision, possibly a serious accident at one of the corners. Another means of racing side by side would be to have two runs built exactly similar in every respect, but where a run twists about at all this is absolutely impossible. Even in the case of a straight run like the double Lake run at St. Moritz, it has been found that no matter how much care is exercised in making them, one side will always be faster than the other. Some trifling variation in the slope, or the fact that the morning sun shines with greater power on one run than the other will make a great deal of difference in their respective speeds.

In consequence of this, all toboggan races are run against time. The men go down in turn, each

man racing as fast as possible. The time of each man is taken by one or other of the two systems which will presently be described, and whoever does the fastest time on one or more courses is adjudged the winner. As it is no uncommon thing for men to be so evenly matched on an ice-run that one-fifth of a second may win or lose a race, it is evident that the system of timing adopted ought to be as accurate as possible.

There are two distinct systems of timing now in vogue in the Alps.

1. The two-watch system, which is always used on the Klosters road, and on all courses where no station can be found from which both start and finish are visible:

2. The single stop-watch system, which is always used on the artificial runs.

The two-watch system is as follows :—

Two ordinary watches (not stop watches) are carefully set some days before they are required for use, so that both the minute and second hand correspond exactly. On the morning of the race the watches are again tested to see that the hands still correspond, and then the two timekeepers separate, one going to the top, the other to the bottom of the run. At an hour previously agreed upon the watch-

holder at the top starts the first competitor and the others are despatched after him in turn at minute intervals. The watch-holder at the bottom of the run takes the exact time at which each competitor passes the winning post. Thus the starter knows to a second the time at which each man started, and the other watch-holder knows the time at which each man finished. When the race is over, they meet at the bottom of the run, compare notes, and work out how long each competitor has taken over his course.

At first sight, this system of timing appears exceedingly crude and unsatisfactory, but it is a great deal easier to find fault with it than to suggest any improvement. As long as there is no point from which both top and bottom of the course are visible, the system of timing by means of one stop watch is out of the question. Nor can the difficulty be met by any electrical system of timing. Such a system is undoubtedly the most accurate that can be employed, and the setting up of a suitable apparatus on the Klosters road is a mere question of money. But supposing the monetary difficulties were overcome, and the Klosters road were provided with the best of electrical timing arrangements, matters would not be one whit further advanced than they are now. Timing by electricity necessitates the making and

breaking of contacts. This fact seems to put it out of court altogether for such a long course as the Klosters road. Imagine the International Race timed by electricity. Suppose there are some twenty competitors. The first man starts at ten o'clock. As he breaks the thread or whatever is used for the purpose at the start, he sets the watch or clock going ; as he breaks the thread at the finish the watch stops. No difficulty so far : the judges note down his time, the threads are replaced and the second man starts. Yes, but at what o'clock does he start? This is the great difficulty which there seems no way of obviating. On a fair course the first competitor would take about 6 minutes to cover the course. Allowing a minute to replace threads and start the second competitor, he would scarcely get away before seven minutes past ten. But if we are to allow seven minutes for each competitor it follows that the last man would leave the top about two hours and a quarter later than the first. Under any ordinary conditions of weather the course would by that time have slowed by more than half a minute and the men starting anywhere in the last half of the list would not have a chance of winning.

Electricity then is unfair, the stop watch is impossible, so that as far as timing on the Klosters

road is concerned we seem to be exactly where we started—at the two-watch system. Everyone cavils at it, but no one has yet suggested any practical improvement.

The second system of timing—with a single stop watch—is invariably used on the artificial runs. In its simplest form, which was improved upon at St. Moritz in 1893, this system was as follows. The competitor got ready to start with the nose of his machine just behind the starting line, with the starter and the timekeeper standing close to him. After the usual warning from the starter, 'Are you ready?' came the 'Go !' and at the sound the timekeeper started the watch and the competitor started on his course. When the competitor passed the winning post the flagman stationed there dropped his flag smartly as a signal to the timekeeper to stop the watch. But it was found that under this system a race might easily be won or lost at the start. Tobogganing skill was in danger of becoming a secondary consideration. A rider of no particular account might 'beat the watch' and a crack rider get away badly, and altogether the start was becoming of too great importance. So, after due deliberation, the St. Moritz Tobogganing Club in 1893 formulated a new method of starting which has been found

to work satisfactorily. The same man acts as both starter and timekeeper. He stands in line with the two posts which mark what is now called the 'Timing Line' and is the same as the old starting line. The competitor places himself in any position



The Double Lake Run, St. Moritz, 1894

he chooses with the nose of his toboggan not more than ten feet behind this line. On receiving the signal to start from the timekeeper he may start in any manner he pleases—he may run fifty yards if he likes before getting on to his machine—but the moment any portion of his toboggan crosses the

timing line, the timekeeper starts the watch. This is an exceedingly good starting rule ; it makes it impossible for a competitor to 'beat the watch,' and it is equally impossible for a man to get left at the post and lose a second or more, as was the case under the old system. But although it is a great improvement it is by no means perfection. In a sport like this, where it is necessary for the timing to be accurate to fifths of seconds, it is essential that in the system adopted there must be no possibility of error. Under the present system there are three possible sources of error—the timekeeper, the watch, and the flagman. The watch used by the St. Moritz Tobogganing Club is a first class chronograph, and it is sent to England to be regulated every summer, so that its readings may be accepted as fairly accurate. With regard to the timekeeper and flagman, it would be going too far to assert that neither of them ever makes a mistake ; no man is infallible. But as long as the Club is able to secure the services of such careful and experienced men as Mr. C. T. Lloyd Jones and Mr. T. R. Scarlett, errors in timing will be few and far between. In reality there is very little difference between this system and that employed for timing bicycle races in England. In a bicycle race the timekeeper starts the watch by the

flash of the starter's pistol, and stops it as the winner crosses the line at the finish ; in toboggan races he starts the watch as the rider crosses the line and stops it by the fall of the flag at the finish. In both cases a signal is necessary at one end of the course. The only practical difference between the two is that in one case this signal is the flash of a pistol, and in the other the fall of a flag. A system which is considered good enough for the making and breaking of cycling records ought to be almost accurate enough for tobogganers.

The flagging at the finish is looked upon by many as the weak spot in the present system, and many attempts have been made to devise some automatic semaphore which would take the place of the flagman. But so far no practical suggestion has been made. Such a contrivance is not so easy to invent as one would think. Tobogganers are not prepared to run into something which will work the semaphore like a swing gate, as one gentleman suggested. The man who charged headfirst at any such obstacle while going at a pace of seventy miles an hour would not be likely to take any further interest in the time of his course. A board sunk in the ice for the toboggan to pass over, a thread for it to break, these and many other methods of work-

ing the semaphore have been suggested ; but all are open to one or other of two objections. Either they are liable to get out of gear, or else they do not make the semaphore move quickly enough. If there is any possibility of the signalling arrangement failing to act, it is worse than useless. Nothing is more irritating than to bring off a really good run and find that one's time has not been taken. Rapid motion in the semaphore is a *sine quâ non*. The falling movement must be as nearly instantaneous as possible, otherwise the timekeeper will always be uncertain as to whether he should stop the watch at the beginning or end of the signal.

But even if such a semaphore were introduced, we should gain very little. One source of human error would be eliminated, but the timekeeper would still remain. What is really wanted is some electrical system of timing which will eliminate the human element entirely ; a system in which the breaking of a thread at the start will set the watch going, and the breaking of another at the finish will stop it. The objections to such a system, which were shown to exist on the Klosters course, do not exist on the ice-runs. But unfortunately tobogganing clubs are not as a rule overburdened with wealth. The electrical appliances which have been used in

America for timing trotting matches are no doubt perfectly accurate and reliable, but they are far too costly for tobogganing clubs to venture upon. However, it should not be long before someone comes forward with a system of timing by electricity at a more reasonable price, and until that time comes we must be content to make the best of the stop-watch system in spite of its imperfections.

CHAPTER VI

TOBOGGANS

IN the Alps the word 'toboggan' is applied indiscriminately to clipper sleds, pig-stickers, coasters, and in fact every kind of vehicle which the wit of man has been able to devise for sliding down a snow slope. It is well known that for the majority of these the term is a misnomer, but it has been sanctioned by long usage, and we can scarcely expect to see a change at this stage of proceedings. After all, it does not matter much what was the original signification of the word. The early Alpine tobogganers wanted some convenient name to apply to all kinds of vehicles, and 'a toboggan' was as good as any other.

The toboggan proper, as used in Canada, is a flat wooden machine made of thin strips of ash fastened together. The boards are turned up in front and held in position by thongs of deer hide. Two light steel runners are often added which increase the speed considerably. A machine of this type is fast

enough on the straight slides of Canada, but it is not of much use on the crooked runs of the Alps, as it steers very badly. A modification of this type is sometimes seen at St. Moritz. It probably owes its existence to native attempts to imitate the 'Canadian.' It is a clumsy looking, coarsely made machine of something the same appearance as the other, and coated underneath with tin. It goes by the name of the tin-bottomed Canadian. This machine steers as badly as the ordinary Canadian, but it used to have a great reputation for pace in the days when the Swiss coaster was the only machine which could be used as a means of comparison.

When toboggan racing started in the Alps in 1883, the only machine used was the 'Swiss coaster.' The coaster varies slightly in shape and appearance in the different cantons of Switzerland, but its general construction is the same in all. It may be roughly described as a skeleton wooden seat resting on a skeleton wooden framework, and running on flat iron runners.

For a proper comprehension of the various types of machines described in this chapter, I must refer the reader to the illustrations, which will show them much more clearly than any amount of description could do.

For the first few years after racing commenced the coaster held its position as the one and only racing machine. It is difficult to understand why it should have done so, as to anyone with the smallest amount of mechanical knowledge it must have been apparent that great improvement was possible. Besides, it was scarcely likely that a plain machine, invented merely as a simple means of carrying light articles, or descending hills in winter, would be the best type of racing machine that could be constructed. However this may be, the fact remains that the Swiss coaster held its position unchallenged until the winter of 1887-8, when Mr. L. P. Child, of New York, came to Davos. This gentleman took in the weakness of the situation at once. He saw that the 'clipper slid' used in America was in every way a superior class of machine to the Swiss coaster, and after considerable trouble he succeeded in getting one built at Davos, which he named 'America.'

This machine can still be seen in the Hotel Victoria at Davos. The following description of it is taken from the 'Alpine Post':—

'It is a sled of the purely American type. Length 4 ft. 10 in., height $4\frac{1}{2}$ in., width 13 in. It is shod with $\frac{5}{8}$ in. round spring runners, with a half inch spring at the centre. The weight of the sled including saddle



Types of Toboggans used in the Engadine and Davos up to 1891

1, Swiss rider sitting; 2, spring runner (Swiss); 3, ordinary Swiss; 4, sloping Swiss; 5, winning toboggan, International, 1888; 6, winning toboggan, International, 1889; 7, 10, 20, modifications of same type; 8, 11, other methods of riding 'Americas'; 12, tin-bottomed Canadian; 13, winning toboggan, Grand National, 1889; 14, Canadian clipper sled; 15, Canadian toboggan; 16, Bobsled; 17, delayed runner (Swiss); 18, narrow Swiss; 19, various pegs

is 29 Swiss pounds, and the weight of both rider and sled is 160 Swiss pounds.

On this machine Mr. Child won the International Race of that year, riding on his side and steering with his moccasined foot. When later in the year another representative of the United States of America, Mr. E. Cohen, won the Grand National at St. Moritz on a similar machine, the superiority of the American type was clearly demonstrated.

It was some time, however, before tobogganers thoroughly appreciated the fact that the America was from every point of view a distinct step in advance. They would not give up the Swiss without a struggle, and made strenuous efforts, by adding round spring runners and lengthening the machine, to show that the Swiss could be made to travel as fast. But the superiority of the America was so manifest that it eventually ousted the Swiss altogether.

The advantages of the America over the Swiss are :—

1. The spring runner.
2. The round runner in place of the flat.
3. Its greater length.
4. The reduction in height, which gives greater stability.

The change from the rigid runner of the Swiss to

the spring runner of the America caused the same revolution in this sport as the introduction of the pneumatic instead of the ordinary tyre did in the cycling world. In both sports the problem was how to get rid of that incessant jarring over the little inequalities of the ground which seemed inseparable from travelling at a high rate of speed. In the case of the wheel this was obtained by interposing a cushion of air between the wheel and the ground ; in the case of the toboggan by putting spring into the runner. But though the spring runner was the main improvement, the three other points must not be lost sight of. The friction of the flat runner of the Swiss over snow or ice was very great, the friction of the round runner on either substance is infinitely less. As far as the speed of a toboggan is concerned, it is difficult to see how we can get a better sectional shape for the runner than the circle. On hard ice the machine is practically running on two parallel straight lines, while on the snow the runners present a surface to keep them from sinking which increases in area as the necessity for it becomes greater. By spreading out the weight over a greater length of runner we get increased speed, and the last point, increased stability, is a great advantage at the corners.

As soon as it was realised that such a thing as

improvement in machines was possible, inventions followed one another thick and fast, all in the direction of obtaining something faster than the America. Mr. Vansittart produced a machine which might either be described as a short heavily weighted Canadian with round spring runners and with the curled up bow cut off, or as an unusually low America heavily weighted. Mr. Wood, under the impression that something was to be gained by bringing the runners closer together, had one made with the main runners only some six inches apart, and with two light guard runners at the sides which were intended to come into use if the machine rocked. There were a great number of inventions of a similar nature, and many of them are still to be found stored away in the various hotels at Davos and St. Moritz, but none are of any practical interest. The first really important improvement after the introduction of 'America' was the invention of the skeleton-framed type by Mr. Bulpett in the winter of 1888-9. Instead of constructing a wooden framework which was liable to warp and shrink and then fastening spring runners to it, he dispensed with the wooden framework altogether and constructed it entirely of steel. The only woodwork in the skeleton type is in the platform which supports the rider's weight, but this platform, although

fastened to the framework, is not an integral part of it, and may go through any of the changes to which wood is subject at a high altitude without affecting the 'set' of the runners.

The first models of the skeleton proved a dead failure ; not from any fault on the part of the inventor, but partly owing to the fact that they were made by the village blacksmith who knew nothing whatever about working with steel, and partly because the steel first chosen for the purpose was not of a suitable character. But Mr. Bulpett pluckily persevered, and finding both German and Belgian steel unsatisfactory, he procured bars of the best English steel, and had the blacksmith taught how to weld and shape this metal. His efforts were at length rewarded with the success they deserved. In the winter of 1891-2 Mr. H. W. Topham succeeded in winning both the big races on a machine of this type. Whether rightly or wrongly his double success was supposed to have been owing in some measure to the superiority of his machine. Since then the skeletons have been steadily gaining in popular favour, until, in 1893-4, the wooden America was conspicuous by its absence, almost every rider of note having adopted the new type. Its chief advantages are :

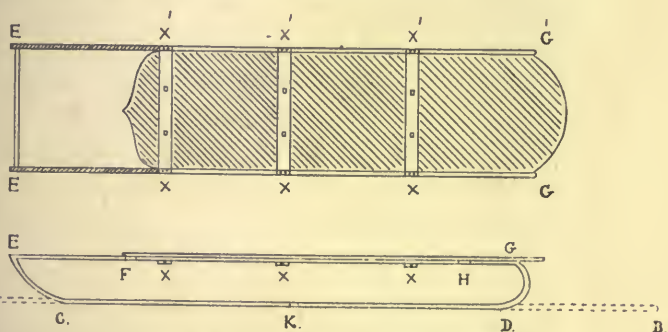
1. It is far stronger than the wooden machines. Consequently it wears better and lasts longer.

2. It can be much more accurately constructed, and cannot lose its shape. That is to say, it is much easier to set up two runners exactly alike and ensure their keeping true, when dealing with a metal like steel, than when using two different substances like wood and steel. Wood, too, unless very well seasoned, is so liable to warp and shrink in a high altitude that it is desirable to eliminate it as much as possible.

3. There is considerably more spring in the runners of a skeleton than in those of a wooden America. The machine is, in fact, a platform supported upon two steel springs. It is consequently far more comfortable to ride, and the extra spring probably carries with it some increase in pace; but for the present this last point must be considered as not proven. I think, however, that the majority of tobogganers are of opinion that the skeleton is, as a rule, faster than the other, but if there is any difference in their respective speeds it is very slight, or it would have been more generally remarked by this time.

The following is the method of constructing a skeleton-framed toboggan adopted by the blacksmith at St. Moritz. He takes a bar of the best English steel, A B, of the required diameter, and cuts it to the length he estimates that he will require. He marks

with chalk the length of runner to rest on the ground, *CD*, leaving a strip of steel each end which he can fashion to the shape of the bow and stem required. The end, *AC*, is brought to a red heat, and carefully bent into the curve required for the bow. He then marks the point, *E*, at the height required for the machine, and turns back the end of the bar in the



Plan and Elevation of a Steel Skeleton-framed Toboggan

direction *EF*. The same process is then repeated at the other end.

When the bow and stem are finished, the blade, *CD*, is still absolutely straight. It is necessary that it should be slightly curved to allow the machine to steer, so the next step is to put the right amount of curve or spring into the runner. He rests it upright, with the points, *CD*, resting on trestles, and strikes a

number of sharp, quick taps with a hammer exactly in the centre of the bar (κ). The amount of curve is determined by the number of taps. But the accuracy of this method leaves much to be desired. As soon as this is finished to his satisfaction, he welds a flat bar of German steel to the ends F and H. The runner is then completed in the rough. It would be a great improvement to do away with the bar of German steel and the double welding by using a longer bar of English steel to work with. In that case the ends F and H would overlap, and could be welded together. So far, however, the difficulties of welding English steel to English steel have proved beyond his powers.

The second runner is shaped exactly like the first. This at St. Moritz is done by eye ; but it would be a great improvement, though a rather expensive one, to commence by making a mould of the shape of runner required, and then fit each runner to it during the various processes of construction. This is the only way of ensuring absolute accuracy, and accuracy means speed. The next thing is to set up the runners exactly parallel to each other. Three flat bars of English steel (xx'), $1\frac{1}{4}$ inch broad and $\frac{1}{8}$ inch thick, are cut into lengths corresponding to the breadth required for the machine. These are the crosspieces

which will connect the two runners together and complete the skeleton framework. Three holes are bored at equal distances apart in the flat upper bar of each runner, the greatest care being taken to see that they are bored in exactly the same places in both runners. Corresponding holes are then bored close to the ends of the crosspieces. The latter are then firmly riveted underneath the upper bars of the runners, thus connecting the side frames rigidly together. The whole accuracy of this setting-up process depends upon the accurate boring of the holes in the crosspieces and side frames. The slightest error in the position of one hole will mar the whole work.

The last stage in the construction of the framework is the polishing. All the roughnesses are removed with a file, and then a fine polish is put on with emery powder and oil. As soon as this is finished the wooden platform is riveted to the crosspieces, the cushion is bolted to the platform, and the machine is complete.

The next step after the invention of the skeleton was to obtain some modification of the runner. The round spring runner was universally admitted to be the fastest, but on the Cresta run there was a serious objection to it—the skidding at the corners. Going

fast at the Church Leap with plain round runners was like trying to hold an edge on a skate with no edges—impossible. To meet this difficulty grooves were invented by Mr. H. E. Forster, who was second in the Grand National of 1890. He rode in that year with his toboggan grooved in the following manner. Commencing from the heel a deep narrow cut was made along the centre of each runner to within some eight inches of the front. It will thus be seen that grooving was invented much earlier in the history of tobogganing than is generally supposed, but it was not till the reappearance of this gentleman in the winter of 1892-3 that any particular notice was taken of them. By that time Mr. Forster had improved his method of grooving by adding two short grooves of some six inches in length on either side of the heel of the runner. He thus had three grooves altogether—one long one down the centre of each runner, and a short one on each side of it at the heel.

The practice on the Cresta run during that winter was remarkable for the fine runs made by Mr. Forster, more particularly through the Church Leap, and this caused several riders to try a modification of the grooving on his machine to see if it would help them to emulate his performances. They copied the short

grooves at the back of his runners, but no one, so far as I know, tried the grooves along the whole length of the runners which were supposed to be in a great measure responsible for his numerous croppers.

The experience of the last two years has shown that grooves are of the greatest value in preventing the runners skidding up the banks at certain critical parts of the Cresta run, such as the first bank of the Church Leap, Battledore and Shuttlecock. It is by no



Forster's first Form
of Grooving



Present Form of
Grooving



Suggested Improve-
ment for heavy-
weight Riders

means certain, however, that the present system of grooving, which is excellent for the light weights, is severe enough for heavy men. If not, it can be made far more effective by cutting the grooves longer and by cutting two grooves instead of three, thus leaving one sharp knife edge in the centre of the runner instead of two edges at the sides. The diagrams will make this clearer.

Grooves were invented to meet the difficulties of

the Cresta run, and most riders will do well to do without them on other runs. Heavy weights may find them of some assistance on a run like the Buol run at Davos, but for light weights they should not be necessary. In a snow road like that at Klosters they are a positive nuisance, as they catch in the snow and check the pace. They can do a great deal of harm, and cannot possibly be of any use. They are at best ticklish things to use, but their use and abuse are fully explained in the chapter on riding the Cresta run, and there is no need to go further into the question here.

Yet another modification of the skeleton has been recently introduced for road racing, and of this I must speak with the greatest diffidence, as it is an invention of my own. I refer to the machine which I constructed for the International Race of 1894, and on which I had the good fortune to be successful. Although built absolutely from theory, it proved its practical superiority so completely that I hope I may be pardoned for giving rather a full description of the principles on which it was built, so that others who wish to try improvements in the same direction may know upon what lines to work.

The following is an accurate description of this 'giant skeleton.' Length over all, including 18-inch

counterboard behind, 6 feet 2 inches. Length of runner on the ground, 4 feet 3 inches. Height, 5 inches ; breadth, 13 inches ; weight, 86 lbs. Skeleton framed. Runners, 20 mm. in diameter, with $\frac{1}{2}$ -inch spring at centre. Bow and stem of runner *exactly similar*, and rising in a very gentle curve.

There are four things noticeable in this machine—the length, the weight, the overhanging board behind, and the shape of the runner at the stem.

The idea was primarily to build a machine which would be very fast in the straights. This was done by making it very heavy, and then, by spreading out the weight over a very long runner, to diminish the resistance caused by the friction of the runners through the snow. Another move in the same direction was to take a good deal of trouble over the shape of the bow, and make the runners curve up from the snow as gradually as possible, so as to encourage them to rise over any little obstructions they might meet.

So far, so good ; but there still remained the problem—how could such a long and heavy machine be made to steer easily round the numerous curves and corners of the Klosters road? The only way this could be done was by working on the counterweight system, or, in other words, by the introduction of a long counterboard at the stem. To turn a

difficult corner the rider has to drop well back, throwing all his weight on to this counterboard, so that the bow lifts up off the ground, and can thus be swung round in the direction required, the heel of the runners acting as both fulcrum and pivot. The shape of this heel is one of the most important points in the machine. Take a racing skate of the Fen type for an example. The heel of the skate is cut very square. When a racer wishes to go round a



Turning a Corner on the Giant Skeleton

barrel (i.e. to turn sharply) he gets well on to the heel just before making the turn, and so checks the speed very considerably. Now this is just what one does not want to do on the Klosters road. All the corners there can be ridden at a very high rate of speed. As the three most difficult corners are directly followed by a strip of level ground, we want the machine to travel fast while making the turn, so as to have as much way on as possible afterwards to carry it rapidly over the level ground. With this object

the heel of the runners in the machine in question was made the very opposite shape to that of a racing skate, and the stern was made exactly like the bow. Thus, when turning a corner with the bow raised off the ground, the machine is *travelling on a blade* instead of *pivoting on a point*. This shape of stern is absolutely necessary in order to obtain the best results from the counterboard.

Such, then, are the various steps by which the modern racing machine has grown up. It would be rash to say that finality has been reached ; possibly it has not. But it is difficult to see in what direction we can hope for improvement. The rules forbid any mechanical means of steering or a mechanical brake ; in other words, we are restricted to a solid machine ; the steering and brake power must come from the rider. Anyone trying to obtain any improvement on the present machine has, therefore, only two lines to work upon : to produce a faster runner, or to devise some more perfect means of steering.

For the present we may leave the machine of the future to inventors, and confine ourselves to the machine of the present. To the man who comes out to winter in the Alps, and wishes to toboggan, the first problem which presents itself is, 'What kind of machine shall I go in for?' Well, the question is not

a very easy one to answer. If he is going in for racing, he must get a skeleton-framed America of some sort ; but the dimensions will depend upon the run for which it is intended, and upon the height, weight, and strength of its owner. To do one's self justice, one ought certainly to have a different machine for each run. The machine which is most suitable to the Buol, Village, or Lake runs is not the best for the Cresta, nor for the Klosters road. Most men, however, will not go to the expense of having a different machine for each run. They prefer to have one of medium length, breadth, and height, which will do fairly well on the easy ice-runs and the Klosters road, and which, with the addition of grooves, will be fairly satisfactory on the Cresta.

I have spoken of *medium* length, breadth, and height ; but it is extremely difficult to say exactly what the word 'medium' should convey. A machine which is long for one man will be short for another ; everything depends upon the rider's height and breadth. The only thing one can say with certainty is that a medium height of machine is from $4\frac{1}{2}$ to 5 inches.

Perhaps the best way to fix the other measurements is to say that for a man of ordinary proportions the distance from his chin to his knee will give

him, roughly, the length of his machine, measured from the front-bar to the stern of the platform. The breadth must be at least that of his chest ; on anything narrower he is certain to feel cramped. As a rule, it is better to have it somewhat broader ; a broad machine is just as fast as a narrow one, and increased breadth gives increased stability.

This normal type of machine will give excellent results on the easy ice-runs. For the Cresta run, however, a shorter one would be easier to manage, though possibly not quite so fast. A light machine is more easily steered than a heavy one, so on the Cresta lightness is essential. On the Cresta, too, the heel of the runners must be grooved. On the Klosters road, on the other hand, length and weight are an advantage ; but the proper machine for the road will be found discussed at some length in the 'Hints to Beginners' at the end of this work.

So far, nothing has been said about the cushion, but it is really rather an important matter. The covering most commonly used is plush, but with the new methods of riding plush is not a good material. It is too holding, and hinders that liveliness on the machine which is the chief characteristic of modern riding. It would be better to make it of leather stuffed with horsehair and wool, so that the rider

could slip about easily from one position to another. Or, if a man wants something to steady him in the straights, it is not a bad plan to have a piece of plush in front for the chest to rest on, and all the back part leather. The cushion should not be thicker than is absolutely necessary for comfort ; on the modern skeleton it can be very thin indeed, as the spring of the runners takes off the greater part of the jarring. It should be the same thickness along its whole length, and not raised up in front ; the rider wants to lie flat down, parallel to the centre-board, instead of being raised up at an angle to it, in order to diminish the wind resistance as much as possible.

When hiring or buying a machine there are one or two points which it is well to look to. The screws and bolts must all be tightened up properly. The runners must be exactly the same shape, and must be absolutely parallel to one another. Their shape can be noted by placing the machine on a level surface, and looking to see that both the runners take the ground at exactly the same place and touch for the same length. Measurements between the runners at bow and stern will readily show whether they are parallel or not. A machine may pass both these tests satisfactorily and yet travel untruly when tried

on the run. If it persists in turning to one particular side when running down a straight, the runners are not similar, and the machine will never be of any use for racing purposes unless it is taken to pieces and made all over again.

CHAPTER VII

TOBOGGANING FOR LADIES

BY A LADY TOBOGGANER

A CHAPTER on tobogganing for ladies can of necessity only appeal to the few. Like lady mountaineers, so lady tobogganers are the product of the invigorating, energy-inspiring air of the High Alps—the offspring of the bracing ozone which forbids the sex, equally with the men, to sit down and be idle. And if it be true that, in travelling through the winter snow between the mountain barriers of Graubünden, nothing will surprise us less than the sudden curvetting of our Alpine steed as some feminine form comes dashing round the corner and flashing by on her machine towards the village below—for all that, we lady tobogganers are but a small knot in the world of women, and can scarcely hope to rouse the enthusiasm of those home-dwellers whose experiences of the sport may be confined to happy Hampstead.

In all truth, were an average stay-at-home English-woman transported to the top of the Cresta run, and confronted with the lightning flash of a girl of twelve negotiating the Church Leap at little less than a mile a minute, we should expect to see more horror depicted on her countenance than an electric tramway might be expected to produce on the gaping face of a Shiré Highlander. But the Shiré Highlander will probably go through varied experiences and witness many Western novelties to blunt his surprise before the electric tramway moves silently among his hills ; and similarly, with lady tobogganers, it is a far cry from the gentle incline of a mountain road to the top of the famed Cresta, and there will be many experiences to take the edge off our surprise and strengthen our nerves before we arrive there.

That tobogganing is a sport well suited to ladies, and rapidly increasing in popularity, none who are conversant with the subject will deny. Every year brings fresh recruits to their numbers and fresh skill to the veterans. Nor is there any doubt why this popularity exists, for, in the first place, it is in itself not an ungraceful sport. Ladies will always have—and rightly have—a rooted objection to any form of pastime which is thoroughly ungraceful or violent, or which necessitates a change from the ordinary dress

of womankind, and provokes the criticism that they are aping the other sex. Years since, the sight of a lady joining in any form of sport would have provoked a titter among the onlookers ; and quite recently the writer herself has been greeted with blushes, laughter, and averted faces when on horse-back in such a well-known country as the Black Forest, whither presumably the art of riding amongst ladies has not yet extended.

But whether or not we admit cricket and the more violent pastimes into the list of ' lady-like ' sports, there is a consensus of opinion that in hunting, lawn-tennis, golf, and similar amusements, the women acquit themselves with credit amongst the men.

And so for tobogganing as a sport for ladies there need be no apology, for it adapts itself to them. We may admit at once that the view of them speeding feet foremost down an ice run is neither an extremely graceful or an elevating sight, yet it is at least a perfectly decent and an exhilarating exercise ; whilst the side-position, riding on the road, when skilfully performed, is as graceful and pretty a performance as that of any lady in the hunting-field. Tobogganing has also this great merit : beyond a few minor details, which will be alluded to later, it necessitates no change from the ordinary dress, and thus attracts to

itself many of us who are 'old-fashioned' [or modest] enough to retain preconceived ideas, and resent any attempt to imitate, in even a modified form, the habiliments of the opposite sex.

Tobogganing has doubtless this in common with other sports, that the younger one begins the better ;



Below Caspar's Corner on the Village Run, St. Moritz

though in our opinion this is not true to the same extent as in those cases where more skill and less courage are required. Still it is an undoubted fact that the most skilful lady tobogganers of recent years have been but girls and often but children. When

one sees some of the mites in petticoats who do not shrink from really arduous ice courses, one is at a loss to prescribe a sufficiently early age at which ice-tobogganing may be commenced. Neither, on the other hand, is it ever too late to begin, if one may judge from the courage displayed by ladies well advanced in years who have never seen such a machine as a toboggan in their lives before arriving in the Davoser Thal or the Engadine.

It is indeed quite wonderful how soon the rudiments of the art are acquired and how rapidly the enthusiasm for it grows. A lady comes out from England, to take an instance from recent experience ; within a week she has left the practice road-runs or the Klosters course for the ice-run ; within a fortnight she is winning handicaps ; and by the end of the two-and-a-half months season she is amongst the best lady tobogganers in the place.

Such progress requires courage and confidence in addition to skill, but in the case of ladies it applies of course entirely to the sitting position. For the sitting position is at present almost the universal one holding amongst them. Indeed, of the hundred or so who may take an active part in the sport in the High Alps, fully ninety adopt the sitting posture ; and this for the obvious reasons that it is the only one suited

to ladies of all ages and adapted to ice-runs and road-runs equally. There are for them, as for men, three possible positions on the machine—lying flat, lying sideways, and sitting. The first is by its nature adapted only for children, and by them almost exclusively practised ; and it is in the unsuitability of this position to ladies that men gain their decisive advantage. Few ice-runs can be attempted in the sideway position without danger of mishap ; many may be negotiated in the sitting posture ; but all, even the Cresta from its summit, can be safely (and are in fact every day of the season) traversed by girls lying flat. It is this fact—its greater safety—no doubt which has induced some of the more active adult ladies to adopt the position ; but in our opinion it is not one to be encouraged, for it can in no sense be termed a graceful performance ; and it would be more to the interests of the sport to be content with courses which may safely be accomplished in the other positions, and leave the more arduous performances to men. These remarks by no means however apply to children, whom it is a treat to watch as they guide their machines to the breadth of a hair down gradients at which their heavier elders of the same sex may well tremble.

As we have said above, the sitting position, which

is rapidly dying out so far as men are concerned, is (and will probably remain) the almost universal one for ladies, if merely for the reason that no other position is thoroughly suited to ice courses. It is a comparatively easy matter to adopt the side position on the road, when there is plenty of snow on the ground, and in this case there is a clear gain both in gracefulness and pace ; but the loss of control and 'drag-power' adds materially to the risk on ice, when at all fast. We expect therefore to see the old-fashioned style hold its own, and those who adhere to it will find plenty of excitement without looking further. The best machine to learn on is undoubtedly the old-fashioned Swiss on flat runners, for not only is there less jolt and less risk of hand-bruising in the use of the pegs, but this class of machine is undoubtedly easier to steer round sharp curves whether on the ice or on the road. After a week or so's practice however upon the Graubünden toboggans ('gridirons' as they used to be rendered, before our more luxurious race-be-cushioned the plain wooden bárs of the natives), the sitting America may be adopted with the result of a considerable gain in pace. The 'pegs' may be either in reality pegs, that is, sticks with a small steel peg at the end, or may be fitted with a large screw, the upper end of which affords much greater resist-

ance to the ice ; the latter are only to be preferred on fast courses. In cases where exceptional leverage is required, as in riding sitting from the leap of the Cresta, many use pegs fitted with a rake very similar to those worn on the boots in the lying down position. For road riding however both the latter kinds are quite unnecessary, as the ordinary pegs and the use of the heels is quite sufficient to enable the rider to pull up rapidly. An ingenious visitor to Davos, we believe, recently invented a drag machine to regulate the pace at will, but we can hardly believe that such a contrivance is likely to become popular even amongst the veriest tyros of the sport.

Before leaving the subject of the sitting position, we must give one word of warning to any friends at home who may be induced to judge of the sport by the pictures of the ever growing army of amateur photographers. Of necessity a photograph is taken from below, or, to explain ; should the amateur wait till his object is opposite him, the chances are infinite that his negative will show a fine presentment of the 'run,' but the tobogganer will have been long past the object point ; and thus it comes about that in amateur photographs the feet figure unduly largely—at least this seems to us to be the most natural explanation. For unfortunately the feet are the nearer

object ; let therefore every lady who prides herself upon their neatness, beware of the amateur ; and if she has a strong peg and plenty of courage, there will be no difficulty in clearing the bank and cleaving the camera. In that case it is the amateur photographer who will suffer !

In racing, where grace must be sacrificed to pace, many seconds are often gained by those who have sufficient strength of back to lean almost flat where there is a straight run before them, rising sharply at the corners and leaning well over to the side to which it is desired to turn.

The sitting position is undoubtedly also safer than the full length position sideways ; there is, for ladies, in case of a spill by no means the same likelihood of serious mishap, the art, which some men have acquired, namely, that of leaving the said machine, when lying upon it, just at the right moment, so that the machine may receive the blow, whilst its rider merely rolls over on the snow, being an art in which most of us ladies, we regret to say, are far from perfect.

With a clear course on the road, and no danger of obstacles in the shape of the inevitable hay sleigh, the side position is undoubtedly the superior. The machine requires to be somewhat longer than the

ordinary sitting America, and it will be some time before anyone fresh from the latter becomes accustomed either to the effect of the pace with the head so close to the ground, or to the evident loss of control ; for both hands and one leg being idle we have only the other leg for guiding and one rake for pulling up. Several positions have been tried by ladies in this side posture, but the one which com-



The Side Position

mends itself to us is the one which was adopted by the most skilful lady rider whom it has been our pleasure to know, and which is given in the accompanying figure.

As will be seen in the diagram the body rests on the left side, being supported upon the left forearm which extends across the breadth of the machine. The left leg is bent back and rests on the extreme rear end of the toboggan. The right hand grasps the

end of the machine *in front of* the right leg, that is to say, on the right hand side of the leg in the direction of travelling. The right leg is the acting leg, and can be moved in a semicircle according to the side to which it is desired to steer. Importance is to be attached to two points. In the first place care must be taken that the weight of the body lies evenly between the sides of the machine, for unless the centre of gravity is adhered to, steering becomes doubly more difficult ; and secondly, the right hand must on no account grasp the machine on the other side of the right leg ; otherwise the arm will prevent the guiding leg from moving freely to this side and interfere greatly with the steering.

It must be acknowledged that at all events the great majority of ladies (including the writer) are complete novices at this branch of the art, but we may expect before long to find this method much more extensively practised on the Klosters course. Some men are inclined to the belief that it is equally as fast as the flat position [and certainly two names at all events will occur to us of tobogganers who are always to the front on the Klosters course when riding in this position] ; but whether that be so or not the method certainly has the advantage in pace over the ordinary sitting one. A very useful way of getting

accustomed to the side position is to be found in practising on a Canadian machine, where the pace is not so great, and the danger when a spill does occur is reduced to a minimum, the toboggan being practically level with the ground. This is only valuable, however, as a means of getting used to the pace with the head near the ground, the actual position described above being obviously impossible when the machine is not raised above the surface.

With regard to the dress most suitable for ladies indulging in this sport, there must be many differences of opinion ; and it would ill become anyone to lay down the law on such a subject. One of its chief advantages however has already been claimed ; namely that no especial change is required. Indeed the best advice to those who take to the sport seriously would be to put on their oldest skirt ; in which case all that is really necessary is accomplished. A pair of snow gaiters extending over the boots above the knee are useful when riding in the sitting position and essential when lying sideways. The most popular form of foot gear in high altitudes is the ugly but useful 'gummi-schuhe,' and provided no rake is required to be attached to the feet, this will be found the most practical in tobogganing, being warm to the feet and affording a firm footing on the slippery surface which

no other form of shoe can give. It will be necessary to have a strip of leather with strong nails fitted on to the heels of these ; otherwise the constant friction with the ice will speedily render them useless. On each side of the skirt are sewn two pieces of elastic, and when the sitting position is adopted these are fastened under the shoes on each side and so prevent the trailing of the dress beneath the runners. This result is further effected by a band of elastic, which passes round both legs and prevents the skirt from ' ballooning ' in the rapid rush through the air. The importance of these latter small details will be obvious when it is considered how easily an accident might occur from part of the dress getting under the runners, and how much resistance to the wind must enter into all calculations of pace. Perhaps a final word may be said about headgear. How often have we seen the desperate efforts to clutch a wind-taken hat result in the speedy somersault of its owner ! Nothing is more suited to tobogganing than a light knitted shawl to cover the head and ears and tie round the hat if necessary.

Such is all that is necessary in the modification of dress. It may be, and probably will be, that with the moving times a special costume will be designed for devotees of the sport. We will wait to see it before

condemning it, but in the meantime it is satisfactory to feel that the everyday garb of western civilisation is thoroughly practical here.

The percentage of accidents to lady riders is a remarkably small one ; and when such do occur they may be almost invariably traced to some special piece of carelessness. Not that the art is to be learnt without tumbles ; indeed it is with toboggans as with horses, and she who never falls will unlikely enough make a dashing rider. Bewildering advertisements of winter hotel proprietors, which set forth in glowing colours some half-dozen enthusiasts careering abreast down a precipice which would not disgrace the cliffs of Dover, are apt to give rise to exaggerated notions at home of the difficulties to be encountered ; just as sensational articles in London newspapers have given before now a false and magnified picture of that blood-thirsty Juggernaut, the Cresta. But the exacting yet closely observed regulations of the various runs have reduced chances of a serious mishap to a minimum and when one reflects upon the amount of novice work, coupled with venturesomeness, which is displayed during the winter months, one can but marvel at the immunity from danger which characterises this outwardly alarming recreation. Confidence and coolness are as necessary in this sport as in any other,

whilst to be the unwilling spectator of a serious accident is, as a rule, to be completely unnerved. It is far wiser after such an occasion, if the course be a severe one, to postpone the run down till the blood is up again ; or it may be found that the machine has a strange affinity for steering its own course ; and that course is as often as not a rapid ascent up the steepest bank; and a still more rapid descent without its rider.

There is a species of lady tobogganers—a rare species let us thankfully admit—who having safely accomplished the course a few times without mishap, cast all thought of danger to the four winds and neglect the commonest precautions in securing their trailing skirts, or tear along at racing pace with no pegs to guide them, imagining vainly that they can trust to their feet as a rudder equally as well as when slowly meandering down the Klosters road ; and some will carry this practice so far as to introduce it on the private runs of their friends, whose feelings and nerves have a right to be respected even when the tough heads and iron tendons of the owner are put out of account. We will go so far as to say that when at last the inevitable somersault and sprained ankle (if nothing worse) do result, the universal sympathy is more likely to be extended to the kindly

hosts than to the misguided individuals who expect their pity. No ; let these foolish enthusiasts perform any freaks which may appeal to them on public ground, but on club runs or private courses let them consider the feelings of the tobogganing community. An accident of any seriousness, whether due to foolhardiness or the cruel scheming of the fates, always affects in sinister wise the interests of tobogganing at large, and has been known to spoil alike the pleasure and the ability of fellow sportsmen for weeks after.

So far we have spoken merely of the usual type of tobogganing, but there are other methods calculated to afford as much amusement, such as meadow tobogganing, double riding, and tandem riding. In the sunny days of March, when the Alpine sun beats down on the still valleys with a perpendicular power which transfers the imagination of us winter sojourners to a more southern clime ; when the softening banks of the Cresta and the Buol herald the approaching spring and forbid any but the most enthusiastic early riser to eke out her winter sport ; when the crumbling snow of the mountain roads turns to slush and steaming impurity before the uninitiated mortal has left his couch ; at these times, in the early mornings and growing evenings, the sloping meadows of the hillsides can be made to afford most amusing

sport to those that seek it. The sun-melted snow wears a slippery surface of the consistency of ice, over which the smooth Canadian machines will gaily bear their burdens. What if we light on a softer piece of snow than we expect and take a graceful header into the yielding element ! What if, unable to curb our fiery steed, we 'rise' the gentle ridge in front and discover too late that we are comfortably seated in the wet lap of some mountain stream ! This is all part and parcel of the morning's work, and we contentedly gather up the dripping folds of our clinging skirt and reappear shortly in the more becoming, closely fitting garments which society (even in an Alpine valley) demands.

For our part we have often wondered why at these times the opportunity is not seized of holding regular races similar to those on the made 'courses'—the only opportunity that presents itself throughout the year when several riders can take part abreast. Recently at Davos there was some talk of making a Lake run broad enough to take two machines with a snow wall between the two divisions of the run, consisting of a short and rapid descent to the lake and a long stretch over the ice by the help of the impetus gained. But what would have been probably a feasible and certainly a highly entertaining

venture fell to the ground in consequence of the engineering difficulties (and consequent expense) presented by the high road which borders the lake. Such a course seems indeed now not likely to be realised, for it would prove a costly proceeding, and



Taking it easy

present none of the difficulties and opportunities for skill which are the attractions of the ice-run generally, and form the *sine qua non* of tobogganing at St. Moritz, by far the wealthiest and most enterprising of Alpine winter resorts in proportion to its numbers. The Lake run and the Village run, though affording

ample opportunities for speed, are immediately deserted by the experienced, as the Cresta course gradually extends itself up the valley, putting forth fresh difficulties at every increase of its length, and claiming on the part of the riders fresh displays of skill.

It may be said at once that for ladies the Cresta course—even that part of it which it is customary for them to use—presents difficulties which none of the other Alpine runs possess. Ridden at full length, with the use of both rakes, many of these difficulties disappear : but, as has been said, there are few who can adopt this method, and we are not aware that any lady has accomplished the course in a side position, otherwise than on a Canadian machine ; certainly we should not recommend them to try the experiment. In a course of this kind there is naturally a vast difference between slowly and quietly taking pleasurable exercise with a plentiful use of screw-pegs, and racing against time. It is the latter which almost always leads to mishaps, and though we have heard that there are some ladies (or at all events one) who can boast that they have never fallen in racing in the sitting position on the Cresta, we must confess unhappily that that is by no means our own experience. The Cresta is a course which

must rank above all others in the Alps, whether for men or women. The question which recurs to the latter on the Village run or on the Buol course will generally be, 'How can I make myself go faster?' That on the Cresta, on the other hand, is rather, 'How much speed must I take off in order safely to get round this point or that?' The result is that whilst numbers enjoy themselves on the ordinary runs, very few ladies indeed make a practice of using the Cresta. We can assure those that are unacquainted with the Village run at St. Moritz, that when in good order a very high rate of speed can be obtained on it; more indeed, we are inclined to believe, than on any run of recent years at Davos; but, as there is little scope for skill, one is naturally tempted to seek something higher, and thus it is that Lake runs and the like lose their interest when something demanding more skill is at our disposal.

Double tobogganing and tandem tobogganing must be taken less seriously than the genuine article, but may be productive of much amusement, especially when ladies and men combine. The only instance of a public race for members of the two sexes riding on the same machine, which we can call to mind, was held on the Clavadel course at Davos in 1892.

Many and various were the systems adopted on that occasion of disposing of the two riders on the same machine ; and the result of a single race will scarcely go to prove the most effective method of so doing. The winners rode a full length America, the man lying well forward, the lady kneeling in the rear and practically managing the steering on this well-cornered course by the inclination of her body from side to side. The second pair rode on a Swiss machine, both facing front and sitting in the ordinary method ; whilst the third rode an America similar to that of the winners, but with the lady seated in front, whilst her partner rode sideways behind, harnessed, we believe, to the machine.

That all of these methods of double tobogganing entail a certain amount of risk, no one will be found to deny, though on the occasion above alluded to, beyond a few scrambles at the fatal corners, nothing happened to mar the success of the proceedings, and the time compared well with that in single riding. We do not wish, however, to advocate the practice of double-riding on ice tracks which present any difficulty, nor to take the blame for any acrobatic feats which readers of these pages may be induced, by a misinterpretation of them, to perform. Rather would we warn the latter that a rectangular corner with

'two up' is a very different thing from the same corner with a single inclination to consult and a single spirit to guide !

Tandem riding consists of the tying together of two toboggans of any sort with a cord, the length of



Double Tobogganing

which should be strictly limited : and as in this case (on an ice-run at all events) the man is usually on the front machine, there is scarcely so much latitude in the choice of position, as he will most assuredly

choose to lie flat, whilst the lady will in all probability prefer to sit up on the rear machine in order to avoid the vagaries of her partner's rakes. This latter position certainly proved effectual in a race within our recollection, and had the additional advantage of enabling the lady to use her pegs on a rather slow course. On a fast course, however, we should be surprised to see such a couple make as fast a time as another pair might do using two lying Americas, the man in front with the feet carried wide, and the lady sideways well to the rear of her machine. In such cases the danger of course is that an otherwise harmless spill may be made more serious by the passenger behind coming into contact with the two iron-shod feet of her partner in front. At all events these methods of double and tandem tobogganing are merely side dishes to whet the appetite when the principal fare is palling. Let care be taken to see that a too frequent indulgence in them does not upset the seat of the digestion !

That the sport of tobogganing will afford to ladies as much amusement as it does to men we do not question, any more than we doubt that it is a form of recreation well adapted to them ; but the likelihood of their ever competing with men is quite another matter.

In the first place the great question of position immediately crops up. Under certain conditions, as we have before remarked, the sideway position becomes impossible ; and that a woman, sitting up with half her weight above the machine, and her body offering full resistance to the wind, can hope to rival a man with his weight spread evenly on the machine and offering scarcely any part of his body for the wind to take hold of—this is of course an impossibility. If, therefore, as we prophesy, men abandon the sitting position for the lying one absolutely (they may almost be said to have done so already), there will be no means of comparison on an ice course ; but given equal conditions—that both adopt the sitting posture—it is extremely unlikely that her average time would rival a man's, owing to the extra resistance offered by her clothes, and her (as a rule) inferior muscular power. And even, when sideway riding has made more progress, it may reasonably be doubted whether she is likely to equal him in a road race by reason of his superior strength in twisting the machine round corners, and assisting it at other times.

As a matter of fact, it will be observed that where a lady specially loses time on a road course is at the start. The preliminary run and the succession of

lusty kicks which distinguish the male competitor's disappearance round the first corner must be contrasted with a few delicate female hops, succeeded by an adjusting of skirts and tucking away of spare material generally, by which many seconds are lost ; whilst, on Swiss machines, it can scarcely be expected that the pegs, worked by a pair of delicate wrists, will give the impetus derived from the rapid succession of goodly thrusts on the part of her male companions.

So far as road racing is concerned the effort of all toboggan committees will be to provide a good course for their races, and as far as possible minimise the value of brute strength and increase the demands of skill. And if this applies to all toboggan racing, more especially does it do so to ladies' races. A soft course, and the eternal pegging which it necessitates, take away all the zest from the pleasure which a race implies, and change an exhilarating pastime into a dreary task. The uncertainty of winter snowstorms is often responsible for the determination to 'make the best' of a bad course, but then is a labour of love turned into a labour indeed.

For our part we cannot but rejoice to see that, side by side with the reduction of tobogganing to a fine art amongst men, such increasing enthusiasm is

shown by womankind. It is a sport at all events which develops two great qualities, courage and presence of mind ; and in our opinion can only compare in its inspiring effects to a cross-country gallop at home. There is little doubt, indeed, that within a few years these pages will have to be entirely rewritten to make way for the magnitude of fresh matter and the striking improvements which will then have to be recorded.

CHAPTER VIII

THE LIGHT SIDE OF TOBOGGANING

THOSE who take up toboggan racing seriously are rather apt to overlook the lighter aspects of the sport. Much hard practice is necessary for those who would excel, and the time for preparation seems comparatively short, so that whenever a keen racing man gets upon his machine it is with the intention of getting as many runs down as he can compress into the time at his disposal. The lovely scenery around him, the laughing throng, the struggles of the novice all are passed by unheeded as he hastens on his way. He is either racing down full speed with his eyes fixed steadily on the run ahead, or hurrying upwards to the top to get another run down as quickly as he may. In this as in other sports the Englishman is apt to take his amusement too seriously—to make a business of a pleasure.

But nevertheless the sport *has* got a lighter side, and dozens of those who find enjoyment in it each

winter are fully alive to this fact. They like to potter about in the bright sunshine and take things easily, making an occasional run now and then, but not with any idea of racing, simply in order to enjoy the experience of slipping down quietly through the frosty air.

Such proceedings, however, are more common upon easy runs like Mr. Dobson's and the Village run than on the Cresta. Tobogganing upon the Cresta run of to-day is looked upon as a rather serious matter, and it certainly is not a run which at first sight would seem to lend itself to light heartedness of any kind. And yet in the records of the Cresta we can trace a fine vein of humour underlying its grimness. In an old number of the 'Alpine Post' there is a most pathetic appeal to tobogganers not to make a practice of pulling their machines up the run when returning to the top after a course. The editor points out that the run is not intended for this purpose, and that the footpath at the side is a safer and more convenient place to walk upon. Imagine the state of things which made such an appeal possible. The bold man who attempted to use the run as a footpath, under modern conditions, would be liable to have an inquest held upon him within a very short time. A free and enlightened

jury of Swiss would be mightily puzzled to know what verdict to return under the circumstances—whether manslaughter, suicide, accidental death, or the visitation of Providence. In another place we read that a novice being challenged to drink a glass of the ‘craythur’ while descending the Church Leap, accepted both the challenge and the whisky. The result is summed up in the laconic statement that ‘the whisky got down ; the novice didn’t.’

These, however, are matters of ancient history. Now we have learnt to treat the Cresta with more respect, and those who would find the humours of the sport must look elsewhere. The Village run is the place. There we see all sorts and conditions of men and women in all the various stages of skill or ‘dufferhood.’ It is a very interesting study in human nature to look on at their struggles, and observe the way in which the amusement gradually casts its spell over the most unlikely looking subjects. Take for example that eminently respectable gentleman who when at home is mainly occupied with making laws for his country. He is the last person that you or he would expect to become an ardent devotee at the altar of tobogganing. It is some time before he will condescend to the amusement, and when he tries it for the first time it is out of

sheer curiosity to see what it feels like, and he considers it necessary to explain that he is merely making an experiment and has not the slightest intention of racing. He isn't going to lie down on his face in that undignified attitude which the young men of the present day affect. It is not that advancing years and a corresponding increase round his centre of gravity forbid such a thing. Oh dear no! nothing of the kind. But he has a certain dignity to keep up. He feels that sitting is a more comfortable position, in which he can take life easy and admire the scenery, and that it is more suitable to his age and respectability. So he purchases a homely Swiss machine, presses his wideawake firmly on to his head and paddles down very slowly, with a wicked gleam in his eye and a determined expression on his face which becomes positively ferocious as he approaches a corner. He looks as if he were going to sentence the run to penal servitude for life if it dares to carry him up those confounded banks. He is not going to make a show of himself at his time of life. He has a distinct objection (in theory) to being stuck up on a bank like a fly on a wall. Besides, he is the father of a family and it behoves him to be careful of life and limb. So with the soles of both feet pressed

resolutely into the ice, and his whole body trembling either with suppressed emotion or from the force with which he is using the pegs to break, he crawls slowly and painfully round the corner in the trough of the run, and makes his way to the bottom at a rate of about one mile in an hour and a half. And he enjoys it too, that is the funny part of it. He dismounts at the bottom and tramps cheerfully up again, towing his rickety steed behind him, chatting gaily with others and recounting the terrible risks he has run.

When he reaches the top he goes through the whole performance over again. His face of agony while he is doing so might lead one to suppose that the misery of a lifetime was concentrated into the effort. But apparently we are mistaken, as he comes up smiling each time, and contrives to get through a number of runs during the day which make a younger and stronger man look somewhat foolish.

But watch this same respectable member of society a few weeks later, when he has become bolder and more confident, and enters for one of those 'Duffers' Handicaps' which are so numerous during the winter. No sooner has the momentous step been taken, all thoughts of age, comfort, dignity, and respectability vanish at once. The cares of state and

politics, the wails of his sorrowing widow and orphans—in prospective—all are forgotten in the feverish excitement of the moment. Though he does not yet know it, his objections to making himself look like a fly on the wall will disappear directly he is called



Crawling round the Corner in the Trough of the Run

upon to start in the race. His one aim and object in life now is to win that handicap. He does not care what lengths he goes to ; it must be done somehow. He has been handicapped on the distinct understanding that he is going to mount his usual

boneshaker, and ride with that caution for which he is noted. He is quite sure in his own mind that the start which has been given him is sufficient to ensure his winning under any circumstances ; but to make assurance doubly sure he discards the homely steed upon which he has been riding, and launches out into a brand new 'sitting America,' with a beautiful green cushion, for which he pays about double its value. A pair of strong new pegs, which will not break under the strain of the powerful strokes with which he means to impel his fiery steed down the run are his next investment ; and then, with a neat pair of speckled grey gaiters encircling his legs, and a close-fitting cap to replace the wideawake of his less experienced days, he presents himself to the gaze of the admiring crowd, and prepares to do or die.

His course, while it lasts, is a sight worth seeing—a vision of whirling arms, as he pegs furiously down the run with strokes whose vigour would be no discredit to a youth of twenty. He charges the first bank like a whirlwind. Round he comes, one gesticulating mass of excitement, making frantic efforts to grab hold of his cap, which has been shaken off his head on to his shoulder. But in his vain efforts to recover it he momentarily forgets to look where he is going, and, flying over the next bank with an airy

grace of which he never imagined himself capable, he dives headlong into the soft snow, and rolls slowly down into the bosom of his family, who collect him together as best they can, and forthwith give him warning that he must never again repeat the performance. But he will, you may depend upon it, the first time that he gets a chance. No power, short of a chain tied round his leg, and held by his better half, will keep this once respectable member of society off the run. The lunacy of tobogganing has taken hold of him, and as sure as he remains amid ice and snows, so surely will that man sneak away to his toboggan every time that he can escape the watchful eye of his spouse.

It is curious how universal this craze seems to be. It spares neither age nor sex, and all who are once bitten by it seem compelled to go on and continue the amusement in spite of their fears.

On the Village run at St. Moritz, which is one of the pleasantest of runs upon which to spend an off day, one sees some very curious sights in the way of what might be called irregular tobogganing, such as three machines tied one behind the other with pieces of string, with one or more riders lying or sitting in a haphazard kind of way upon each, the whole combination moving in solemn procession down the run.

One sees little girls, blissfully unconscious that there is anything extraordinary about the proceeding, go down kneeling upon their machines. They appear to set all the laws of gravity at defiance, but nothing ever happens—their guardian angel seems to be always on the watch. Once I saw one of these little girls actually attempt to go down standing up, but for the moment her angel must have slumbered, as the results were disastrous. My illustration shows one of these same young ladies attempting to utilise some wooden palings to assist her round a difficult corner. Such a light hearted proceeding would make an old hand shudder ; *she* went at it with a serene indifference to danger known only to the young, and got round, too—not with a scramble, but quietly and easily, as if it was a common, ordinary, everyday occurrence with her, as perhaps it was. These children certainly know what the light side of tobogganing is better than their elders.

Numbers of those whom age or ill-health or excess of dignity will not permit to take part in the sport are constantly to be seen about the runs. Although they cannot or will not attempt it themselves, they seem to take the keenest interest in watching others come to grief. Perhaps they are right. After all it is a mere matter of personal opinion. For my part

I think I would rather break my own neck than watch another man do it (break his, I mean, not mine). But this, again, is a mere matter of personal opinion, and, as I have not yet succeeded in performing the feat, perhaps I am not in a position to speak with authority on the subject.



Utilising the Palings at a Corner

I have always been greatly interested in watching the various couples, generally of opposite sexes, who go down the run upon the same machine. As far as the tobogganing part of the business is concerned they are all right. They ride well enough, and if *he*

does seem a little over anxious for *her* safety, it is but natural under the circumstances. But what I never can understand is why they should take such an unconscionable time in making their way up to the top again. They always seem to go the longest way round, and to walk as slowly as possible, pausing to admire the scenery on every conceivable opportunity. I once timed one of these couples to take nearly an hour to walk up a path that any average person could do in ten minutes ; and they didn't look as if anything was the matter with them either. She was young and nice-looking and so was he, and they both seemed to be quite happy and contented with themselves. I suppose it is one of those mysteries which must be left unexplained. (N.B.—It may be well to mention that I have noticed the same phenomena in other places besides the Alps.)

A sporting contest which took place at the beginning of January in 1894 may be appropriately mentioned under the heading of this chapter. The writer and another gentleman agreed to ride a match upon the Village run at St. Moritz under the following conditions :—Catchweights, riders to be dressed in full hunting kit—viz. top hats, red coats, leathers, tops, and spurs. Both competitors to be mounted upon rocking-horses, which should be fitted with

steel runners. The race duly took place, both competitors adhering strictly to the conditions as to dress, &c., and the whole population of St. Moritz turned out *en masse* to witness the novel sight. Contrary to the usual custom in toboggan races they started side by side and rode two heats, but owing to some unavoidable jostling at the corners one of the riders fell twice, and left the other to win both heats. Unfortunately modesty forbids me to mention which it was that fell and which won.

Bobsleighting is another amusing form of tobogganing which has become very popular during the last few years. A Bobsleigh consists of two machines, usually of the America type, connected together endways by a board, upon which the crew sit or lie, as the case may be. The front machine is pivoted to the board, so that it may be turned from side to side and so cause the structure to move in whatever direction the steersman wishes. The back machine is fitted to the board in such a manner that it has an up and down movement, in order to prevent the board from breaking its back when it encounters any obstruction or unevenness of the ground of a more pronounced character than usual.

The Bobsleigh, Bobsled, or double-ripper, originally tried to thrust itself into the International Race

at Davos in 1889, on the ground that the race was open to any class of machine. The authorities, after long and anxious deliberation, came to the conclusion that a conveyance which consisted of two machines and a board could not be contained under the heading of one toboggan, and ruled it out of the race. The Bobsled, being refused a position in serious tobogganing, betook itself promptly to the lighter paths of the sport, where it received a hearty welcome, and has since won a host of admirers.

The original machine was only intended to hold one person ; but things have changed considerably, and a machine of the present day will hold as many as eight or nine. The Julier, Albula, and Maloja passes are the favourite hunting-grounds of enthusiasts in this branch of the sport, and on a bright, sunny day these excursions are very pleasant.

The usual mode of procedure is to make up a mixed party of six or seven, or as many as our 'Bob' will hold with discomfort. We start off about ten in the morning, and drive in sleighs to the top of the pass, dragging our unwieldy machine behind us. We lunch at the hospice, and after a short rest commence preparations for the return journey.

The owner of the machine, who is sure to imagine that he knows all about steering, settles himself into



TURNING A CORNER ON A BOBSLEIGH

the box-seat, and takes a firm hold of the 'ribbons,' which in this case are made of iron wire. He rests his feet upon a steel bar, which is fastened across the front of the machine for the purpose, and from which he can obtain as much leverage as he wants when going round a corner. As soon as he is fixed in position the crew commence to simmer down into their places behind him. This is not quite so easy as it sounds. One always feels on these occasions that man is not that perfect creature that so many imagine him. However useful his limbs may be elsewhere, on a Bobsled they are an encumbrance. There is no place to put them. He is conscious that the only satisfactory way out of the difficulty is to take them off and carry them in his pocket, or somewhere where they will be out of the way until they are wanted again; but as nature will not permit of this, he gets out of it by leaving his legs outside the conveyance until all are seated and ready to start, when someone about two places in front of him will gather up each of his feet and hold them up until the descent is accomplished, or, if the feet are unusually large and heavy, until exhausted nature compels him to let them drop.

The most important member of the crew next to the man who is steering is the brakesman. He sits at

the stern, and his duty is to take charge of a large board studded with nails, which acts as a brake, and is worked by two levers, one at each side. When called upon to brake, he is supposed to fling himself back on to the levers with all his strength, so as to press the nails hard into the snow and check the pace ; but usually at the critical moment he is busily engaged doing something else, and forgetting all about his duties.

Of late years a most pernicious habit has crept in, by which the brakesman carries a bugle, and makes night—or, rather, day—hideous with the doleful sounds he extracts from it during the descent. The bugle is intended to lend a martial air to the proceedings. Perhaps it would do so if the conditions were more favourable and the performer had a little more practice beforehand. It is difficult at any time to play a horn or bugle tunefully, but it is more especially so when one is bumping down a mountain pass at the rate of some twelve miles an hour. Beside, he is not given a fair chance. Just when he reaches the most pathetic part of his melody, and is throwing his whole soul into the effort of trying to find out whether the particular note he is wobbling on at the moment is C sharp, or E flat, or D unnatural, there comes a peremptory cry of ‘ Brake ! ’ from the front, and he is

obliged to drop his instrument of torture and come down to more mundane matters.

Corners at which it is necessary to brake follow one another so rapidly that his performance is disconnected and jerky, and he finally gives it up in despair and subsides into gloomy silence as we glide swiftly down into the little village at the foot of the pass.

It seems but a few minutes since we started, and yet we have covered a space of some nine or ten miles. If asked straightaway at what pace we had been travelling, we should answer without the slightest hesitation, and under the impression that we were adhering strictly to the truth, that we had covered ten miles in about a quarter of an hour. But perhaps it would be as well to look upon this statement—like the rest of this chapter—as somewhat light.

CHAPTER IX

DRESS

PROBABLY the first thought of every Alpine tobogganer who reads the heading of this chapter will be, 'What on earth can he find to say about dress? There is no such thing as tobogganing dress in the Alps. Most men, in fact, look upon the sport as an excellent opportunity for wearing out clothes.' All this is very true, and what is the result? We almost make an eyesore, if such a thing be possible, of what should be the most picturesque sport in the world. In Canada it has long been the custom to wear a distinctive dress when tobogganing, which is not only picturesque but practical. In the Alps it is scarcely going too far to say that we never see a costume which is picturesque, and until recently we rarely saw one which was thoroughly practical.

Tobogganing is an athletic winter amusement. Therefore, the dress must be light, loose, and warm, giving free play to every limb; at the same time it

must keep out the snow in the event of a fall. There are a variety of other points to be considered, but perhaps the simplest way of dealing with the question is to take each article of dress in turn and show what conditions it has to fulfil.

Whatever headgear be selected, it must be secure on the head. It is liable to be taken off by the rush of air caused by the pace at which the machine travels, or by any sudden shock ; and if it flies off in the middle of a run it is almost certain to unsteady the rider. It may drop down over his eyes, and the sudden movement of his hand to push it back to its place is apt to cause the machine to rock, and so spoil the course. The Eton boating cap makes an excellent headgear, as it clings closely to the head and is not easily affected by the wind. But I think that the knitted woollen 'tuque' used in Canada is the best of all. It looks well, clings closely to the head, is not affected by the wind, and has this additional advantage, that in bad weather it can be pulled down over the ears to protect them from the cold.

For the outer covering of the body nothing is better than the ordinary woollen sweater, which is warm and comfortable, and in the event of a fall will keep out the snow.

Gaiters must be worn to keep one's legs dry. The gaiter most commonly used is made of thick white cloth, and protects the leg from foot to knee. But I think that the long trouser-gaiters worn by many of the St. Moritz riders in 1894 are a much more practical form of legging. They are simply white cloth trousers, shaped like a gaiter from the knee downwards, fitting close over the boot, and buckled under the sole of the foot with a leather strap. As far as the nether man is concerned they form a thorough protection from the snow.

Gloves of some kind are a necessity. The gloved hand is freely used on an ice-run for delicate steering, and on a snow-run for pegging or swimming. In the event of a fall they form an excellent protection for the hands. It is not pleasant at any time to be sent sprawling down an ice-run of varying degrees of roughness, but with ungloved hands it is more than unpleasant, it is painful. Opinions differ as to the best material for the gloves. Wool, canvas, cloth, doeskin, with or without leather-tipped fingers, all have their adherents, and probably one is as good as another. They should be a trifle large, so as to run no risk of cramping the fingers, and should be cut gauntlet-shape, coming well up over the sleeve of the sweater, to keep out the snow.



The Alps

Canada

Types of Tobogganing Dress

The boots should be good strong shooting boots well oiled, to keep the leather from hardening when it gets wet from the constant walking in the snow. The soles should be well shod with nails to ensure a foothold in the slippery ice at starting. The rakes or claws used for braking will have to be fastened to the toes of the boots. They are secured to the boot by a metal plate screwed on to the sole, and in 1894 an improvement was introduced in the shape of a light metal toecap which was secured to the plate underneath, and so took a good deal of the strain off the sole. Before the introduction of this toecap it was no uncommon thing to see the sole of a boot wrenched bodily off, owing to the tremendous strain thrown on it in braking on the Cresta run. For an ice-run the rakes will be most effective if the teeth are cut sharp and small ; numerical strength and not size being the main point. The toe of the plate in which the teeth are cut should be square rather than round, so as to let as many of the teeth as possible act upon the ice. For road-riding, on the other hand, the rakes will be most effective if the teeth are cut long, rather wide apart, and blunt.

Elbow-pads to protect the elbows at the corners are worn by most riders ; some few wear knee-pads as well. Pads are more particularly useful on an

ice-run, where the most careful riders are bound to let the elbows drop on to the ice occasionally. On the Cresta run the pace is so great that, unless pads are worn, the least touch of the elbow on the ice makes it feel as if it had been seared with a hot iron. The handiest way of wearing the elbow-pads is to have them sewn into the sleeve of one's sweater ; but many riders prefer to use, for both knees and elbows, pads arranged like the knee-pads of a horse, which can be buckled on and taken off at will. I think they are rather less in the way if they are sewn to the sleeves and knees, but it is not a matter of very great importance either way.

CHAPTER X

FIRST STEPS ON AN EASY ICE-RUN

I HAVE selected the Village run at St. Moritz to illustrate the correct way of riding an easy ice-run for several reasons. First, because it is an excellent type of such a run. Secondly, because it is always constructed in exactly the same place, and with the exception of trifling variations in the slope of the banks does not change its shape from year to year. Consequently it is possible to give fairly definite rules for riding it, without any fear of those rules being rendered useless by some radical change in its construction or direction. Thirdly, it is the run upon which all St. Moritz tobogganers of the future will take their first steps in the sport. And lastly because it is the run upon which I myself learnt to ride, and as I have a vivid recollection of the difficulties it presented to me, I am in a position to point out what those difficulties are, and how they may be most readily overcome.

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This is the first artificial run upon which a new-comer to St. Moritz can learn to ride. If he is lucky enough to be able to commence when the run is first made at the beginning of the winter, he will be able to learn while it is still a snow-run ; he can gradually accustom himself to the pace, as the surface gets harder and faster, and eventually, when it is iced from top to bottom, he will find himself accepting the pace as a matter of course, instead of being startled by it, as would have probably been the case had he started on an ice-run from the first.

Those who come out to St. Moritz later in the winter, when the run is already iced, will find it judicious to try a few runs down the snow-runs, such as the Cresta road or Fussweg before venturing upon the ice. When they are satisfied with their nerve, and have learnt something of the balance required, it will be time enough to attempt the greater difficulties of the ice-run.

Many beginners are under the impression that it is not safe to commence learning in the headforemost position on an America. They think that, because so many still ride the Swiss in a sitting position, this is the easiest way for a beginner to commence, and that they can learn to ride on more advanced methods as soon as they have got accustomed to the

Swiss. I can assure them that it is not so. If they intend to take up racing it is better to start in racing position and upon a racing machine at once. The time they would spend in learning to ride in the sitting position would only be wasted. It would not enable them to ride headfirst any sooner than they otherwise would. On the contrary, it would delay them. Besides, the headfirst position is easier and safer than any other, and can be learnt up to a certain point in a much shorter time. I can remember well how frightened I was the first time I lay down upon an America and let it start off down the run, but I can also remember how, directly it had started, that feeling of fear gave place to one of complete confidence as I realised the perfect control over the machine which the headfirst position gave. My experience of the sitting position has been that it gives one very little control over the machine, and that the latter is liable to upset on the slightest provocation.

Before going any further, a word of warning will not be out of place. When a man is learning to ride headforemost on an ice-run it is absolutely necessary for him to have rakes on his boots, and until he has learnt to use his feet correctly, both for steering and braking, he must not be deluded into trying to ride the Village run without them. He will most probably

see all the fastest and best tobogganers riding in gouties (snow-boots), and it looks perfectly safe and easy. So it is, very easy indeed, for a man who knows how to ride, but until the beginner has got a



The Running Start

good balance, has learnt to use his feet properly, and to keep his head under difficulties, in fact, until he is sure that he has perfect control over his machine, he must not try these fancy tricks, but must be content

to wear rakes. The worst accident that has ever occurred on the Village run was caused by a beginner trying to ride without them. And now, after these preliminaries, let us suppose that the beginner, with gloved hands and rakes on his boots, has come to the top of the Village run with his toboggan for the first time. He should start quietly, lying down full length in the middle of the machine and letting it start of its own accord. His first object is to get to the bottom in safety, and to do this he will have to steer with the rakes on his feet. He will soon find that when he puts down the left foot the machine will turn to the left, and *vice versa*, the angle at which the machine turns being regulated by the amount of pressure applied by the foot.

As long as the run is snow he will find little or no difficulty, the machine will steer easily in answer to the touch of his feet, and if left to itself will run straight down the centre of the course. The snow banks take him easily round the corners, and the pace of which he has heard so much is nothing startling. But the moment the run is iced and a hard true surface is obtained, his difficulties begin.

He comes to the top, and starts off, probably expecting to find the pace somewhat greater than usual, but otherwise no great change. When he

comes to that insignificant looking curve just after the start, he puts down the right foot to turn his machine, as he has been accustomed to do on snow. But instead of answering his touch in the usual manner, the machine comes sharply round and makes for the snow bank on the right of the run. Down goes the left foot hard to rectify the course, and the machine, answering readily to his touch, darts round towards the left bank. And so he goes on, yawing about from side to side, getting more flurried every moment, till by the time he gets to Caspar's Corner he has probably lost his head completely and takes an ignominious fall in consequence. I think most riders, on recalling their first experiences on an ice-run, can remember that feeling of utter incapacity to keep the machine straight. It is simply the result of the change from snow to ice, and is owing to a lack of appreciation of how delicate the steering must be on ice. On ice the machine steers ten times more easily than on snow, and will answer to the lightest touch. The only way to get over this difficulty is to keep on going down till the right amount of strength is learnt by experience. Half a dozen runs ought to be quite sufficient.

At this stage of his career the beginner will find that detailed hints as to the correct method of riding

different parts of the run are of little use to him. He must simply keep on practising, going down steadily day after day, until he learns to balance himself properly, to keep his feet up in the straights, and to use them correctly at the corners. The two faults which are most common at this stage are trickling the feet along the ice in the straights and lying to one side of the machine instead of in the middle of the cushion. Both are bad faults and must be corrected as quickly as possible. After a fortnight or three weeks of steady practice of this kind, during which he will do well to watch good riders as closely as possible, he will be in a position to take advantage of the following suggestions.

We will suppose there is going to be a race on the Village run. All who intend competing are practising hard, and amateur timekeepers are always on the spot to clock every run. Experts and novices alike are trying by every means in their power to improve their times.

The first and one of the most important things in racing is the start. The various methods of starting can be divided into two classes—the standing and the running start.

For the standing start the rider stoops down with the nose of the toboggan between his legs, grasping it

close to the front, and when ready throws the machine forward with all his strength and springs on to it.

For the running start he should stand upright beside, and rather towards the back of, the machine. (He can keep it steady till he is ready to start by



Leaping on to the Machine after the Running Start

placing his foot on one runner.) When he is allowed to start, he should spring smartly forward, at the same time stooping and placing his hands on the front part of the cushion, then sprinting along at top speed for seven or eight yards, spring *smoothly* into the saddle and lie still.

This is the start *par excellence* for all runs, with the possible exception of the Cresta ; but to get the best possible results from it a considerable amount of activity is required. It is not easy to run at top speed in the stooping position necessary for placing the hands on the cushion, the knee is so apt to hit against the chest. This difficulty becomes greater if the rider grasps his machine firmly by the side bars instead of merely placing his hands on the cushion, as to do so he will have to stoop lower. But the main difficulty in this start will be found in the final leap on to the toboggan. When tried for the first few times the machine will most probably give a lurch and turn crooked, and all the advantages of the running start will be lost. The object to be aimed at, at first, is to leap on *smoothly* and quietly, taking great care not to upset or rock the machine in any way. It will want a great deal of practice, but practice makes perfect, and the beginner will eventually find that it is possible to leap on to the toboggan, throwing every ounce of power into the forward spring, and yet so smoothly and accurately that the machine will not be shaken in the slightest degree.

Various modifications of this start have been seen from time to time, but I do not think that any of them are faster than, if as fast as, the method described.

One of the best is that adopted by Mr. H. W. Topham. It looks very risky, although so far as I know he has never had a fall over it, and it has certainly been most successful, but to do it as well as he does, not only is great activity required, but a considerable amount of strength.

He stands upright, lifts the toboggan off the ground, and places it under his left arm, grasping it firmly with both hands. On the signal to start being given he dashes forward six or seven paces at top speed and hurls his toboggan straight down the run, leaping on to it himself almost before it has touched the ice. Although it has produced great results this start is not one which any beginner can be recommended to attempt, as, judging merely by appearances, it must be extremely difficult to throw the machine down absolutely straight every time. To make the most of any sort of running start, it is necessary to wear gouties or indiarubber-soled boots of some kind, as with indiarubber soles one can run down the ice slope without any fear of slipping, while with the ordinary tobogganing boots, not only is the danger of slipping greater, but the difficulty of running in the stooping position is increased by the rakes, which are apt to catch in the ground, unless great care is taken to lift the feet well up as they are brought forward.

But, as I said before, no rider should attempt to ride without rakes until he has thoroughly learnt not only how to use his feet correctly, but how to steer without using them at all.

When pitching on his machine after a running start the beginner must take care to land well forward on his toboggan, as the next part of the run is a 'straight,' and straights should be ridden with the weight as far forward as possible. He should grip the machine firmly with both hands and lie right down into the cushion as close to the machine as possible. The body and legs should be kept quite rigid, with the feet close together and well up off the ice. About twenty yards before Caspar's Corner it will be necessary to take the machine quietly across to the right of the run, so as to make the corner as wide a sweep as possible. This ought to be done by moving the head and shoulders gently to the right, and pulling (not jerking) the head of the machine in the same direction with the wrists. If the machine refuses to answer to this 'body steering,' as it is called, a light touch on the ice with the fingers of the right hand will do all that is necessary. For delicate steering of this kind the feet should never be used unless absolutely requisite. It is true that when indiarubber shoes are worn the touch of the foot is

almost as delicate as that of the hand, but if a man gets into the habit of using his feet on the Village run, in all steering, delicate or otherwise, he will find that he has formed a habit which will be very difficult to shake off, and which is absolutely fatal to good riding on the Cresta where rakes must be used.

The next thing to be negotiated is Caspar's Corner (a right-angled turn to the left), but as the slope of the bank varies considerably in different years it is difficult to give any very definite rules for riding it. It always becomes easier, however, if just before reaching it the rider lifts and swings the head of his machine hard to the left, at the same time putting down the left foot. As a rule, when once on it, it is better to let the bank do the work and not attempt to come off it too quickly, but this must depend greatly upon how steeply the corner is banked, and also upon the weight of the rider. Generally speaking, the steeper the bank the more work will it do, and a light weight will have less need to exert himself to come off it than a heavy weight. Once off this bank it is not sound to try and cut the bank on the opposite side, a proceeding which is likely to result in skidding. It is better to cross boldly over, hit the left bank hard, and when leaving it put the *left* foot gently down to send the machine

steadily off down the straight. A heavy weight may find it necessary to use the right foot freely to help him round the bank, but the last touch, as he leaves it, should be given with the left foot.

Now comes one of the hardest things to do really well in tobogganing—the straight. It looks so simple to see a man riding perfectly straight down the centre of it without stirring, but it really requires more practice than anything else. By the straight I mean that part of the run which extends from Caspar's Corner to the last corner of all. What is known as the Belvedere Corner comes in the middle of this piece, but it is really a gentle curve and not a corner, and should be ridden exactly as if it was part of the straight.

There are three important rules to be remembered in riding straights.

1. *The rider should be well forward on his machine.* It is difficult to say exactly how far forward the weight ought to be, but I think that at the least the head and neck of the rider ought to be in front of the front bar of the machine. My own experience has been that the further forward the weight is, the faster the machine travels. On the other hand, if the weight is very far forward, it is extremely difficult to avoid a fall if the machine hits any small bump, or

runs through any slush or inequalities in the surface such as are not uncommon on the Village run. Perhaps the best rule to follow is to ride as far forward as possible consistent with feeling absolute control over the machine in case of accidents.

2. *The feet must never be used to steer in the straights.* This is the ideal which we all aim at, and few of us attain. Theoretically all steering in the straights should be done by quietly moving the head and shoulders across to the side to which it is required to go. But very often, particularly when the surface is not very smooth, the machine will refuse to take any notice of this, and then a light touch on the ice with the gloved hand will do all that is necessary. A bad fault in the straight is over-steering. Nine riders out of ten over-steer when trying to correct their course, and lose time in consequence. If it becomes absolutely necessary to steer with the foot, in order to stop skidding or for some such reason, the foot should be put down with a short sharp flick ; it should not be dragged along the ice.

3. *The machine must never be allowed to skid in the slightest degree.* Skidding takes off a lot of speed, and is extremely difficult to avoid at the commencement of the straight. It can be reduced to a minimum if the rider will make it a rule always to touch lightly

with what is known as ' the wrong foot ' (the foot next the bank), when leaving the bank leading into the straight. This steadies the machine, and sends it off the bank travelling absolutely true. Once started travelling true, the machine will run dead straight, neither turning or skidding if it is only left to itself ; but few beginners realise this, and they will insist on steering it out from the side of the run into the middle, for fear of touching the snow bank at the side with their shoulders. If they would only leave it alone they would find that as a rule it will come gradually out into the middle of its own accord.

An illustration of this may be very often seen on the run. A man takes a fall while coming round Caspar's Corner, and loses his machine. It is no uncommon thing to see the machine travel off down the middle of the straight by itself, steer a beautiful course round the Belvedere Corner, and run straight away to the last corner, where it is pretty sure to come to grief. It rides the straight by itself more accurately than it does with the novice on it. As far as direction of course is concerned, the moral is obvious.

Next we come to a very debatable point. Should a man lie absolutely still while travelling down a straight, or is there anything to be gained by lifting

or jerking the machine along with the arms, and will such jerks cause it to travel faster than it otherwise would?

Now there is no doubt whatever that it is possible to keep on making the machine jump forward, and



Hand-steering

thus accelerate the pace considerably. Anyone can prove this for himself with a light chair on any smooth surface. If he sits down on the chair, grasping it firmly with both hands at the sides, and lifts

his feet off the ground, he will find that it is quite possible to make it travel slowly forward by a series of sharp jerks. But he will at the same time discover that it is a very exhausting form of amusement, and lifting a toboggan along is more exhausting still. But the great objection to this mode of riding is that it is liable to lead to skidding, and, as has already been shown, it is of vital importance that the machine should not skid in the slightest degree in the straights. Once out of some ten or twelve runs all may go well; the machine may be made to jump forward all the way down the straight without the slightest skid, and a brilliant run will be the result. But this is not of the slightest use for racing purposes. What we have to aim at is a dead level of excellence, the power to make three consecutive fast runs all resembling each other as closely as possible. This is well-nigh impossible if the straights are ridden by the jumping method, and that is why all the best riders condemn it, and prefer what may be called 'the classical style,' which consists in lying absolutely still on the machine, with the feet close together and the body and legs rigid. This keeping the feet together is of greater importance than might appear at first sight. In watching a rider who is noted for his pace in the straights, his style will usually be found to be remarkable for its

neatness. This neat appearance is owing to the fact that his feet are quite close together, and he is lying quiet. He is in the best possible position for cutting through the air, and this has a noticeable effect on the machine, which runs very fast in consequence. This position for the feet is not the one which the beginner would adopt if left to himself. He will find a certain amount of difficulty in keeping them together. He wants to sprawl them out on each side of the machine, ready to help him on the slightest emergency. But he must overcome this tendency. The mere fact of spreading out the feet and legs to the sides offers a vastly increased surface to the resistance of the air, which must check the pace, and, if he could only bring himself to believe it, the feet can on an emergency shoot out just as quickly from the central position as they can from the other.

The value of paying attention to all these points is becoming better appreciated every year, although there are still some riders, excellent in other respects, who will not take the trouble to conform to them, pointing, with some show of truth, to their own successes as arguments against their value. It may be replied that their successes are more than probably owing to their skill at the corners, which would counterbalance their defects in riding the straights.

But the best answer is one which was given in a discussion between two athletes as to the harmfulness or otherwise of smoking during athletic training. One of them, as an argument in favour of smoking, instanced a well-known long-distance runner of by-gone days who was hardly ever seen without a pipe in his mouth, even when in course of preparation for his most important races. 'Aye,' said the other thoughtfully, 'but we can never know how good S—— would have been if he had not smoked.' The same applies to those riders I have been speaking about. They cannot judge of the value of details because they have never tried them, and when they do try them, they are likely to be surprised by the results.

So much for riding straights. Now we come to the last corner of all, which is within fifty yards of the winning-post. Here the machine is travelling very fast, and as the corner is usually banked very steeply, it can be ridden without any loss of speed. It should be taken rather high, and the rider should hold on it until he can see down the short straight to the finish. He should then wrench the machine down off the bank and run straight to the winning-post. By riding the bank high it is easier to hold on to it than if it be ridden low, and this also allows the machine to keep the pace which it has gained in coming down the

straight. A low course at a sharp, clippy corner is apt to take off a good deal of speed.

By the time a beginner has mastered all these points he will know a fair amount about the principles of riding an easy ice-run, but if he wishes to succeed on a difficult ice-run like the Cresta, he will have to study the points set forth in the next chapter.

CHAPTER XI

HINTS ON RIDING THE CRESTA RUN

By the time that any part of the Cresta run is finished in any year, and riding on it has begun, those St. Moritz tobogganers who are learning the sport for the first time will have got past the novice stage. They will have had some six weeks of practice on the Village run, which will have taught them to ride 'straights,' to steer, and to balance properly. If the Lake run has been opened, they will have learnt there to accustom themselves to pace. On both runs they will probably have had many opportunities of competing in races, and they will possibly be under the impression that they know something about tobogganing.

But when they are allowed to try their prentice hands on the Cresta run they will find that they have made a mistake. They are well grounded, they have learnt the rudiments of the art on the other runs, but that is all—the art itself still lies before them.

This applies with equal force to many of the Davos representatives who come over to St. Moritz to practise for the annual race. Some of them are experienced riders who know the run almost as well as the St. Moritz men, but there are always a certain number who are new to it, who have never seen the run before, who are, in fact, beginners, and will have to learn the run like all other beginners from the beginning.

Unfortunately it is not possible to give such detailed directions for the proper riding of this run as has been done in the case of the Village run. With the best of intentions it is impossible to build it exactly the same each year, and the most trifling variations imaginable may make all the difference in the correct manner of riding any particular bank. But there are certain broad principles which will hold good in most years, and which will be found to apply with slight variations to all riders, whether they be light or heavy weights.

Before going into the question of riding there are one or two general points to consider.

FALLS

Much has been said and written of late about the dangers of the Cresta. A series of somewhat serious

accidents in 1894, most of which could have been avoided by the slightest care on the part of the victims, gave the run a bad name, and caused many to stay away from it who would otherwise have been keen to race. If people would only estimate the run at its proper value such accidents should not occur. The Cresta is admitted to be by far the most difficult ice-run in existence. This being so, it is obviously not a run for either the timid or the reckless tobogganer. Nor is it a run for any one to attempt who does not feel himself or herself capable of riding with some sense of security on the lesser ice-runs. The man or woman who cannot ride the Village or Buol runs without a fall is not a fit candidate for the Cresta. But if people will only bear these facts in mind, and will obey certain well-known rules, they will find that the Cresta is not such a very terrible affair as they imagine. Ladies, unless very expert, should never start higher up than the Ladies' Starting Place. If they start there they will find that it is not easy to hurt themselves. The only places where they can fall have plenty of snow placed there to receive anyone who may come to grief. The Church Leap, too, which is such a serious difficulty for those who start from the top of the run, is robbed of all its terrors.

The men who start from the top, and are bent on

getting to the bottom as fast as possible, ride under different conditions altogether. For them the Cresta is not a bed of roses, but they, at any rate, know what they have to face, and that spice of danger which exists does but add zest to the amusement. In the well-known lines of Lindsay Gordon :—

No game was ever yet worth a rap,
For a rational man to play,
Into which no accident, no mishap,
Could possibly find its way.

For men practising for the races over the whole length of the Cresta run falls of some kind are inevitable ; they come to all, expert and novice alike. But if a man can only keep cool, and not lose his head, he is not likely to meet with any serious accident. As a rule there is a certain amount of time both for thought and action. A fall is the natural result of going too fast at a difficulty, and the rider is pretty sure to know beforehand that his pace is too great and that there is trouble ahead. With this knowledge he ought to be prepared to act the moment he feels that a fall is inevitable. When he feels himself going, he must get clear of his machine at all hazards ; it does not matter how he does it, he must get it out of the way somehow, and fall into the snow which is placed outside the run to catch him.

As long as he falls clear of the machine he is hardly likely to hurt himself, but if he holds on to it, and both go over the bank together, there is no saying what will come of it. It may hit him on the head or break one of his ribs—in fact, anything may happen—but it is almost certain to injure him some way or other before he gets clear of it. It is far better to throw it out of the way at once.

When practising falls ought to be avoided as far as possible. A bad fall may destroy the nerve for a time, and a fall of any kind tends to make a man lose confidence in his ability to ride fast round the bank where he fell. Complete confidence in himself, his machine, and the banks are essential to anyone who wishes to ride fast and well. A great number of falls could be avoided if riders would be content to start their practice for the year riding slowly and carefully, and then gradually increase the pace as they get to know the difficulties of the run more thoroughly. It is not sound to start, as so many do, by rushing at it, and then gradually-reducing the pace in succeeding runs till at length they manage to reach the bottom in safety. Such methods are bound to result in numerous falls of a more or less serious nature, which are not calculated to give a man confidence in his own skill. A useful motto for the beginner to

bear in mind when learning to ride the Cresta run is 'More haste, less speed.' Paradoxical though it may appear, a fast run is not the result of riding the banks particularly fast, but of riding them accurately. Steeplechase riders and hunting men are fully alive to the fact that falling is an art, and an art which should be learnt by all who take part in those sports. The sooner tobogganers wake up to this fact, the less will we hear of strained muscles, wrenched tendons, &c. It is only too common to see a man go flying over a bank literally anyhow, with his legs and arms spread out in all directions. Under such conditions the limbs must suffer when he pitches in the snow. The right way to fall is to bunch up the legs and arms close to the body, and tuck down the head, in fact, make oneself as much of a ball as possible. When this is done, it is wonderful to see the falls a man can take without sustaining any serious injury. To sum up then. Start the season by going slow. Throw away the machine when in difficulties. Fall out of the run, not in it. Bunch yourself into a ball. If these points are attended to, we shall hear less of the dangers of the Cresta in the future than we have in the past.

Beware of south banks on a sunny day. Banks facing south, like Battledore and Bulpett's Corner,

get the full benefit of the sun, and are sure to become soft and dangerous towards the middle of a bright day. The toboggan runners sink in and catch in the bank instead of gliding smoothly over the surface, and if the rider is unprepared for this he is bound to take a nasty fall. There is no certain remedy, but the chances of a fall will be minimised if he grasps his machine very tightly, gets well back on it, and spreads out his legs in readiness to check any tendency to rock over.

Every rider, before putting on his boots preparatory to practice, ought to look carefully to the rakes, and see that the screws securing them to the boots are all tightly screwed up, and that the sole of the boot is quite sound. The strain on the rakes and the boots when braking is very great, and should a rake come off or the sole of a boot give way at a critical moment, the rider will get a very disagreeable fall.

Before going in for a race the rakes should be sharpened, and the machine carefully examined, to see that it is all right, the nuts tightened properly, and the runners true. All keen tobogganers make it a practice to walk down beside the run before racing and examine it carefully, so as to obtain some clue to its pace at the most critical points. This is necessary, because the pace of a run may change considerably

in twenty-four hours ; but a careful inspection of the surface before the race will give a man a very fair idea as to how it compares with the course of the day previous.

And now to come to the actual riding itself. The start is not of so much importance as it is on other runs. The peculiar conformation of the starting place does not favour the running start, and so most riders make use of the standing start instead. Whatever method be adopted the rider must get away smartly. If he cannot gain much, there is no reason why he should lose anything by starting slackly.

THE CHURCH LEAP

This is the most trying part of the run for the beginner, or at any rate he thinks it is. It looks so difficult and dangerous as he examines it carefully from the stands above before going down for the first time, that he fears to venture down it. This feeling of fear takes some time to wear off, and I think most of us have gone through it when learning the Church Leap. But in reality it is not nearly so difficult as it looks. To a certain extent it belies both its looks and its reputation, and if beginners will follow certain well known rules when riding it they will find

that it is not by any means the difficulty they thought it was.

The following rules contain the gist of the whole matter, though the beginner will do well to dispense with the first of them until he has gained a certain amount of experience :—

1. Brake late and brake strong.
2. Drop well back on the machine when approaching the leap, but keep the arms *bent*, not straight.
3. Keep well to the right when approaching the leap.
4. Swing the machine sharply to the left *long before* it strikes the first bank.
5. Sprawl on the first bank, but if steady get the weight forward and bring the feet together for the next two.
6. Ride the first two banks low, but the third high.

Some of these perhaps apply more to a rider who wants to know the *best* way of riding the Church Leap, but even the beginner will appreciate them after the first few days' practice.

Let us examine each of these rules separately.

1. *Brake late and brake strong.* Do not, as so many riders do, start braking in half-hearted fashion before passing the Stable Junction, the brakes gradu-

ally going down harder and harder till the leap is reached. This is the riding of timidity and is not conducive to pace. By all means start practice for



The Church Leap, Cresta Run

the year by braking too early rather than too late, but don't just trickle the feet along as if there were no object in putting them down. The moment the

rakes go down they should be put down as if they meant business, and should be used with as much power as possible. Each man has to find out for himself by experiment the correct place to start braking, and having found it must keep it. But this *important* place is in a different spot for every weight and is liable to change its position every day with the ever-varying pace of the run. This is what makes that 'judgment of pace,' so often spoken of in connection with the sport, of so great importance. The ideal judge of a pace would know exactly how fast his machine was travelling, and so could time to a nicety the correct moment for putting down his feet. He would brake neither too early nor too late, but just at the right place. But this ideal is not often to be found. Most riders brake a little too soon on their first run, so as to be on the safe side, and make corrections on subsequent runs. It is this difficulty in finding the correct place for braking that causes so many men to fail to do themselves justice in the first run in the Grand National Race. No preliminary run is allowed ; their only clue to the pace is obtained from a careful inspection of the surface before starting ; there is very little time in that short distance between the start and the Stable Junction to estimate the pace correctly ; they are probably somewhat flurried by

the importance of the occasion, and so are not in that calm, cool-headed state so essential to the correct judgment of pace. The result is that they either brake too soon—and so go too slowly, and are out of the race in consequence—or, worse still, they brake too late and fall.

2. *Drop well back on the machine when approaching the leap, but keep the arms bent, not straight.* The weight should go back at the same moment that the brakes go down, so that the rider may have ample time before the turn to get settled into the new position and to think of what he is doing. The weight is not really required at the back until just before making the turn, but if the rider leaves it till then he is apt to get flurried with having so many things to think about. In riding fast at the leap it is so necessary to keep cool and collected that all movements ought to be made early and in some well-defined order. One reason for dropping back on the machine is to ease the weight over the bows, and make it easier to swing the machine round at the right moment. But the rider must be very careful not to get so far back as to lift the bows off the ice. The moment they lift the rider loses all control, and the machine takes to steering on its own account. Another reason for dropping back is to put the

weight directly over the grooves, and compel them to bite well into the ice when the turn is completed. The arms must be kept bent, so that they may exert their greatest power at the moment of making the swing, as described later. With a straight arm little or no power can be exerted in a sideways direction.

3. *Keep well to the right when approaching the leap.* This makes the angle of the turn a little wider, and so makes the turn slightly less difficult.

4. *Swing the machine sharply to the left long before it strikes the first bank.* I look upon this rule as the key to the Church Leap. No rider who does not know it can ride fast through the leap. All who have ever ridden much on the Cresta run know this well, and yet it is astonishing to see how few men act upon it. Anyone who took the trouble to stand above the Church Leap in the winter of 1893-4, and watched for this turn as each man went down, would have seen that, though one and all believed that they were turning before striking the bank, only a very few were really doing so. The truth is that if a man tries to turn at what appears to be the natural place, the bank will catch the machine and carry it up before the turn is completed. The pace is so great that he is on the bank before his hand can respond to his brain. The correct place to turn will seem to the

rider to be absurdly early. It is impossible to lay down in feet and inches exactly how far before the bank this place is, as it varies with the activity, weight, and strength of the individual, but the distance is more like six yards than one. Another important point in making the turn is the swing. The main thing to remember is that the body must always go across before the machine. I fancy that what really happens is that the impetus is first given to the machine by the arms and shoulders, the body swinging hard across, with the left foot acting as a pivot, and that the body continues to swing until the grooves catch and stop the turning movement. When the swing is made correctly the weight will always be over the inside runner—the one which is lowest on the bank—at the moment that the grooves catch. This makes the inside groove do more work than the outside one and helps to resist the tendency of the machine to upset. If the weight does not come across before the machine the balance is not perfect, the weight rests in the centre of the machine or over the outside runner, and if the grooves make the machine rock as they generally do, it will be very likely to upset. I want to make myself quite clear on this point. There are not two movements in making the swing correctly. The body does not swing first

and then the machine. It is all one movement, but the body keeps just in front all the time the turn is being made. These two points are those which will be of most use to the beginner when he is learning the Church Leap. Try and start the turn very early, and when swinging remember that the body must always keep ahead of the machine.

5. *Sprawl on the first bank, but the moment a good course is assured get forward again, pick up the feet and bring them together to ride the next two curves.* Sprawling or spreading out the feet on the first bank is not a graceful performance to look at, but it is thoroughly sound riding, and in conjunction with perfect balance will put an effectual stop to any tendency on the part of the machine to capsize. The mere fact of using grooves tends to upset the machine. They stop all skidding up the bank, or should do so, but the force in an outward direction which causes the machine to skid when it is not grooved must continue to act in the same direction whether they are used or not. The grooves will not allow the machine to skid, they check any tendency in this direction with a sudden jerk, and at the moment of this jerk the machine will upset unless we take measures to stop it. These measures consist in throwing the weight on to the inside of the curve and



A LOW FAST COURSE ON THE SECOND BANK OF THE
CHURCH LEAP, CRESTA RUN

so using the inside groove most, as mentioned above, and in spreading the feet out wide on either side of the machine to assist the weight in balancing it correctly. As soon as this moment of unsteadiness has passed and the rider feels that a good low course is assured, he should pull himself forward again to stop the grooves from acting on the next two banks, pick up his feet, and bring them together in the correct position for riding fast.

6. *Ride the first two banks low, but the third should be taken high.* It is easy enough to say ride the first two banks low, but it is a very difficult thing to do it. However, it is what we all have to work for, if we want to go through the leap at any pace. The height at which a man rides the second bank depends entirely upon how he rides the first. If he takes the first low it is quite easy to keep low on the second, provided he can get the weight forward and off the grooves before he reaches it, but if the first is taken high he will be thrown high on the second as well, and the whole thing will probably degenerate into a scramble to avoid a fall. Riding the first two banks low imparts great speed to the machine, and this speed will be still further increased if the third bank is taken rather late and high. This will enable the rider to stay on the bank far longer than if he had

gone on to it early and ridden it low, and the longer he can hold the bank the faster will it sling him down the next straight to Battledore.

These are the main principles to be followed in riding the Church Leap, and to them I would add just one word of caution. The Church Leap is no place for larking or frivolity of any kind. It is a serious difficulty, and must be treated and ridden seriously. This warning would be unnecessary if it were not for the fact that one or two riders in 1894 were of a different opinion. One even went so far as to wave his hand to a friend and shout 'Good-bye' to him as he flashed down the slope to the leap. Almost before he could turn his head to look where he was going he was on the first bank and—well, he did not get on a toboggan again that year, but wandered dismally about with his arm in a sling, a warning to all careless riders. No! Treat the leap seriously, and ride it carefully, and no harm will happen, but if familiarity breeds contempt and a man thinks he can play any tricks he likes while riding it, he will assuredly pay the penalty.

BATTLEDORE AND SHUTTLECOCK

These two famous corners constitute the second great difficulty of the run. I say difficulty, and not

difficulties, advisedly, as each is part and parcel of the other, and whether they be easy or difficult, Battledore will always have to be ridden with reference to Shuttlecock. If the Stream Corner is trappy and difficult, as it was in 1893, this principle will have to be extended, and both Battledore and Shuttlecock will have to be ridden with reference to the Stream Corner. But I think we may assume that this latter will not vary much in future years from the position and construction which were found to give such satisfactory results in 1894. So we can leave it out of the question and confine our considerations entirely to the other two banks.

We must remember, first of all, that after leaving these corners we turn into the long straight. Every tobogganer knows how important it is to travel fast at this part of the run ; but many do not quite appreciate the extent to which their time down the straight depends upon the pace at which they come into it. The faster a rider travels round the last part of Shuttlecock and the Stream Corner, the faster will he travel down the straight. This is the explanation of that apparent anomaly which is so often noticed—a light weight gaining on a heavy weight in the straight. The light weight travels much the faster of the two round Shuttlecock, and so turns into the straight at

a much greater pace than the heavy weight ; and though the extra weight of the latter tells as he goes on, and he gains back a certain amount of what he lost at the commencement, yet he never quite gets level, and so he is clocked to lose time on the light weight at the very place where he had been calculating on gaining it.

It is plain then that to discover the correct way of riding each of the banks we are discussing, we have to work backwards, from the straight to the Stream Corner, from the Stream Corner to Shuttlecock, from Shuttlecock to Battledore ; all are intimately connected, and each must be ridden with reference to what is coming after it. Bearing this in mind it will be evident that the main thing to learn is the correct way of riding Battledore. If it is ridden correctly the other bank will present no serious difficulty. This will hold good even in a year when Shuttlecock is said to be difficult, provided always that the banks are true curves. If the banks are false no rules are of the slightest use, but on the Cresta of all runs we do not expect to find false banks. When Shuttlecock is said to be difficult it will always be found that the real truth is that Battledore is so easy that riders are tempted to race round it too fast and so come to grief on Shuttlecock. In happy ignorance of the

reasons for their fall, they attribute it to the difficulty of the latter. On the other hand, when Shuttlecock has a reputation for being easy it will be found that Battledore is so far difficult that they have to ride the latter slowly and carefully whether they like it or not,



Battledore and Shuttlecock Corners, Cresta Run

and so when they reach Shuttlecock it seems a comparatively simple affair and gets a name for being easy in consequence. The secret of riding these corners successfully consists in taking a *low course on Battledore*. Every man, no matter what his skill, can keep low on the bank if he likes ; it is primarily a

mere question of taking off enough pace by braking hard and early. Of course those who are skilful enough to take it fast as well as low will have a considerable advantage over those who have to ride more slowly. But the point I want to emphasise is that it pays better to ride slow and low than fast and high. This does not necessarily mean that a rider is to crawl round the bank. He is to go round it at the highest rate of speed at which he can keep low, and a rider of very little experience ought to be able to keep low and yet go at a very fair rate. The rules which have already been given for riding the Church Leap can be applied in a modified form to this bank also, and are absolutely necessary to the attainment of a fast low course.

These rules are so important that I have ventured to repeat them in the form in which they apply to this corner :—

1. Brake strongly.
2. Drop well back on the machine when approaching the corner, keeping the arms bent.
3. Keep well to the *left* when approaching the bank.
4. Swing the machine sharply to the right before reaching the bank.
5. Sprawl on Battledore, using the *right* foot with all your strength to bring the machine round.

The most important variations from those given for riding the Church Leap are in Nos. 3, 4, and 5. As Battledore turns to the right, the rider has to keep well to the left when approaching it, and swings the machine to the right. It is not necessary to commence the swing so early as in the case of the Church Leap, as the angle of descent here is not so great and the turn is not so severe.

If this method of riding Battledore be adopted, and the rider makes all considerations as to pace, give way to the low course, he will find that there is not much difficulty in Shuttlecock. If he puts his left foot down hard and swings to the left just before reaching it, the turn will come fairly easily. But if he has chanced Battledore, riding it fast and high and getting off it with difficulty, he will find that there is no time to regain control of his machine before Shuttlecock. Without complete control he cannot swing at the right moment, and as the bank is purposely built low, he will find himself shooting up and over it almost before he is aware that there is any danger. Once safely on to Shuttlecock, his object is to let the pace increase as rapidly as possible until he turns into the straight. To do so he may have to go very high on the bank, but this is not really such a dangerous proceeding as many imagine. Anyone

with sufficient nerve to do so should let the machine go round within a few inches of the top. It will travel much faster there than it would lower down; but if the rider thinks he is going too high for safety, he has only to pinch the bow of the machine slightly downwards with his hands and arms to bring it out of danger.

THE STRAIGHT

As the rider turns into the straight he must get forward again on his machine, taking great care not to drop his feet on to the ice as he does so. If the feet touch even for a moment, he will take off some of the pace which he has already been at such pains to acquire on Shuttlecock.

The rules for the correct riding of straights have already been given in the chapter on the Village run. But, in addition to these, there are one or two special points to be noted on the Cresta. The iced surface of this run is so smooth and so carefully made that there are no unseen irregularities to threaten an upset, and that caution which had to be exercised when riding the Village run becomes unnecessary, so that the weight can and should be thrown as far forward as possible. Another point is that it is not judicious, as a rule, to ride down the middle of the

straight. The right side gets less sun during the day than the other, and will generally be found to be both harder and faster in consequence, so that a man will get down it quickest by hugging the snow on the right all the way.

A skeleton-framed toboggan can by a sharp jerk be made to jump the road which crosses the straight, and this will probably increase the speed slightly ; but at the same time it is rather a risky proceeding, as the machine does not always pitch quite straight on the ice, and unless it does pitch straight it must skid and lose pace instead of gaining it.

The last part of the run varies so much in different years that there is no use my offering suggestions as to riding it ; each man has to learn it afresh for himself every year.

When practising at the beginning of the season, a man will very often find that some particular corner is bothering him. He feels that he is not taking it as it ought to be ridden, and yet he cannot find out what he is doing wrong. He should stop riding for a couple of days, and stand at some point where he can get a good view of the other riders as they take this corner. He should pay particular attention to the riders of about his own weight, and note very carefully how high they go on the bank and at what point

they commence the turn. If he does this, he will learn more in two days of careful observation than he could have done in ten or twelve days of hard practice, simply because he can look at some sixty runs in the same time that he would have required to make six.

Lastly, keep cool on race day. The man who gets nervous or excited when racing on the Cresta may as well stay at home and save himself the trouble of competing.

CHAPTER XII

HINTS ON RIDING THE KLOSTERS ROAD

(INTERNATIONAL SHIELD RACE)

FOR the benefit of those who are new-comers to the sport, it may be well to repeat that the 'Shield Race' is open to any type of single toboggan which may be ridden in any position ; while the 'Cup Race,' which is dealt with in the next chapter, is confined to the Swiss coaster, ridden in the sitting position.

For road-racing the machine is half the battle. A suitable machine will go as far towards winning the race as any skill on the part of its rider can do, so that it is worth one's while to go to considerable trouble to procure a machine of the right character. Length is for many reasons an advantage. By spreading out the weight over a long runner we prevent the runners from sinking into the snow as deeply as they would otherwise do, and, as will be shown later, the long runner is of the greatest assistance when pegging or punting.

Weight is an advantage on a fast course, but makes the runners sink too deeply into the snow when the going is heavy. By a fast course I mean anything faster than what is known as a 'six minutes course.' Every few seconds that the course gets slower than this will reduce the advantage gained by carrying weight. On a 6.30 course weight is a distinct disadvantage.

As none of the corners are banked and some of the turns are very sharp, it follows that the machine must be so broad as not to upset easily. A good rule to ensure stability is that the breadth should be two-and-a-half times the height.

A height of five inches will be sufficient to allow the board to clear the snow under all ordinary conditions of the road, and this would give us a breadth of $12\frac{1}{2}$ inches. A heavy weight might even find it an advantage to add on another half inch, and make the breadth 13 inches, but for all riders of average weight the former measurement will be quite enough.

Whether the machine be long or short, a counter-board at the stern will be found of the greatest assistance at the corners. With a very long machine this addition becomes an absolute necessity.

Needless to say, on the road as on ice, the skeleton-framed type is superior to any other. The runners must on no account be grooved.

Having purchased a machine, the next thing is to learn its little ways. For machines seem to be very like horses. They are full of tricks, and no two can be ridden quite alike ; we have to humour their wayward moods until we sometimes have a half suspicion



H. W. Topham starting for the International Shield
Race, 1894

that our steed is not a machine, but a living, breathing creature. Of course in order to get used to a machine it does not make the slightest difference whether we practise on an ice-run or on the snow road. Its little peculiarities can be learnt just as

easily on the one as on the other. Many people, however, are under the impression that one who has learnt to toboggan upon an ice-run will have to start afresh when he gets upon the road ; that his previous practice will be of no use to him. This is quite a mistake ; it is an advantage in some ways to have learnt upon ice. The novice who has learnt upon an ice-run can never know what nervousness means on the road, except under such extraordinary conditions as prevailed for the race of 1886. The want of banks to take him round the corners may worry him at first, but this is a matter which he will get used to in a very short time, and then he will ride the road as well if not better than one who has learnt altogether upon it. The first essentials for all kinds of tobogganing are perfect balance and the power to shift the weight quickly, accurately, and smoothly, as may be required, and these can be learnt just as readily on ice as on snow. There is yet another point in which the man who has been accustomed to an ice-run has a distinct advantage. He has been used to travel at a rate of at least 30 miles an hour, and now he comes to a road upon which the pace is reduced to some 15 or 16 miles an hour. This is bound to make him exert himself far more than one who has got used to the pace of the road, and

exertion on a road course means pace. Those who have been practising for some time for the Shield Race would find it a great advantage to leave the road alone for a day or two before the race, and confine their attentions to an ice-run. They will come back to the road far keener than they would otherwise have been, and will unconsciously work harder to increase the pace.

When practising there is so much traffic on the road that it is advisable to wear rakes. It is very trying at any time to come round a corner at top speed and find a horse and sleigh standing in the middle of the road ; but without rakes it becomes a choice whether the horse or the toboggan shall suffer. Probably the safest thing to do is to roll off and let the horse take the consequences, but under these circumstances the driver is sure to demand an exorbitant amount for damages. Of course if one can run into the snow at the side of the track so much the better, but as a rule there is no time to think. The horse seems to have a happy knack of planting himself just round the corner, and you are into him before you realise that he is there.

Rakes on these occasions may do something, and it is certainly advisable to wear them, but when racing they are unnecessary except in the case of an

exceptionally heavy weight on a very fast course, and it is a distinct advantage to dispense with them. In india-rubber boots one can run better at the start, punting is more effective, and when steering with the inside foot at a difficult corner they do not take off so much pace as the rakes.

One often hears it stated that the International Race is won or lost at the corners. This is not quite accurate. As a rule I should say that the winner gains time everywhere, at the start, down the straights, and at corners. It may be little, it may be much, but everywhere he gains something. However, in one sense there is a great deal to be gained or lost at the corners, but not, as so many people think, at the very difficult corners. It is those lesser curves which so many never notice which are such important factors in making a fast course. Some men ride curves and corners exactly alike, steering with their feet, but nobody who did so has ever yet won the race. To ride a really fast course a man must be quite clear as to the distinction between curves and corners, and the correct way of riding each. It must be plain that if anyone had sufficient nerve and skill to ride down the Klosters course at full speed from start to finish without using his feet anywhere, he would be almost certain to win the race. Impossible

though this may seem, it is by no means certain that it is outside the range of practical politics. Tobogganing as a sport is not very old, and it is quite possible that in a few more years sufficient skill may be attained to render such a feat possible. Even now, 1894, there are only three corners on the run at which the best riders find it necessary to use their feet—the Bridge, the last corner but one, and the last. In other words, all the other so-called corners are in reality curves, and must be ridden as such by lifting and swinging the bow of the machine without using the feet.

The main point in which road-racing differs from racing on an ice-run is that the pace, except on rare occasions, is so slow that the machine has to be helped along. The delicacy of steering and the small details which it is so necessary to notice when riding on ice, have to give way to a rougher and more athletic mode of riding. The rider can no longer devote his skill to *letting* the machine run ; he must devote all his strength and energy to *making* it run.

There are two methods of increasing the pace, punting and pegging. The advantages of one system over the other are often discussed, but in reality they do not clash ; there is a proper time and place for each.

PUNTING

Short of running with the machine, which is not permitted except at the start, punting is the most rapid method known of getting up the speed again when it has been taken off in rounding a difficult corner. No matter how fast one goes at a bad corner



Punting : the Beginning of the Stroke

the pace must slow down greatly when rounding it, and then is the time for punting. The Bridge Corner, the last corner but one, and from the last corner to the finish are the places where it will be found most useful. At the start, too, it is necessary, but of this I will speak later. In punting you kneel on one knee, and kick the machine along with the other foot ; in other words, the propelling power

is all on one side. This is why it pays to have a long machine. With a short one it is most difficult to punt strongly and yet keep the machine running straightforward. It must try and turn to the opposite side to that on which the leg is acting, and it is most difficult to prevent it doing so. With a long machine it tries to turn certainly, but to a much lesser extent,



Punting : the Finish of the Stroke

and it is much easier to counteract this tendency. The great thing to remember is to kneel in the middle of the machine instead of towards the stem, and to grasp it with the hands as far forward as possible, so as to press the bows well down into the snow, and compel the machine to hold its course. If these points are attended to it is quite easy to punt quickly and strongly, and yet keep a long machine straight.

The next thing is the stroke. As I have shown, the object to be aimed at is to get up as much speed as possible in as short a time as we can. The strokes then must follow each other quickly, but at the same time each stroke must be long and powerful. It is not a succession of rapid flicks with the foot. The body and head must do just as much work as the leg. The best punters bring the foot as far forward as they can, at the same time straightening the body and lifting the head ; then, as the body and leg lunge backwards with the stroke, the head drops till it almost touches the cushion. There is no dwelling on the stroke either before or after. Every movement is as quick as possible. But from beginning to end every ounce of power is thrown into it. It is the same principle as spurting in a boat-race. The strokes have to follow each other with great rapidity, but even when rowing forty-two to the minute the oars must catch the water from the very beginning of the stroke, and each stroke must be pulled right through—legs, shoulders, and body-swing doing their fair share of the work. It is just the same in punting. The strokes have to be rapid, but the stroke that ‘is pulled right through’ is twice as effective as ‘rowing short.’ I have attempted to show this stroke by illustrations, and it is a most important point to

master for racing on a road. Like most matters which are of importance it requires a great deal of practice to do properly.

PEGGING

The terms 'pegging' or 'swimming' are applied to all methods of assisting the machine along with the arms. The distinction between the right places to make use of pegging or punting is that pegging must be used at all times when it is necessary to prevent the pace from slackening, while punting, as I have shown, must be reserved for those occasions upon which the pace has slackened considerably in spite of all our efforts to prevent its doing so. Thus, when rounding curves, as distinguished from corners, it is quite easy to keep up the pace by pegging. Occasionally, when the course is slow, it pays to peg down the straights ; but to do so a man wants to be very strong and in excellent condition, as long-continued pegging is very exhausting. Most men will find it sufficient to peg round all the curves and at the beginning of each straight, reserving their strength as much as possible for the curves and corners which *must* be ridden fast and cleanly. The slightest mistake or unsteadiness at any corner will lose a lot of precious time.

Opinions differ as to whether one should use pegs in the headforemost position, or whether it is not better to use simply the gloved hands. Personally I think that pegs are more effective than the hand when actually in use. But they are a nuisance at the corners. No matter how they are arranged they always seem to get in the way, and I think that it is so important to be absolutely free at the corners that, on the whole, most men will do well to leave pegs alone.

Now as to the correct way of pegging or swimming. It is curious that so many men use the latter term to designate this mode of propulsion, and yet so few seem to remember a simple fact connected with swimming. One sees men lying flat on their faces grab at the snow with both hands or peg with both hands. They feel that they are not gaining much by so doing, but they fail to realise that they are putting themselves in about the worst position possible for applying their strength effectively.

Now look at the swimmer racing. Does he lie flat on his face and plod along with the breast stroke? Unless the contest is of abnormal length he certainly does not. He lies over on his side, and makes use of the side or overhand stroke. He does so because it is the most effective, and when tired he changes

sides. In pegging or swimming on a toboggan it is just the same. The side or overhand stroke will in nine cases out of ten beat the breast stroke, and it has the further advantage that, as in swimming, one can change arms when tired. When using this stroke round a curve, the arm on the outside of the curve must do the striking, and the weight must be dropped well back to ease the bows slightly and let the strokes gradually bring the machine round. It is advisable to grasp the machine very firmly with what I may call the unemployed hand, and keep that arm braced and rigid so as to let the full power of the strokes pass from it to the machine.

Unless the machine is long the side stroke is almost impossible in the straights. On any machine the weight must be thrown forward when using it in the straights, to press the bows into the ground and prevent the machine curving gradually to one side. This stroke requires very little practice to learn, its effectiveness or otherwise depending almost entirely on the length of the machine.

The easiest and most effective way of taking a bad corner is to drop the weight back until the bows lift clear of the snow, and then swing the bows round in the new direction, using the foot on the inside of the curve to help the movement. It is not easy on

the Klosters road to over-swing any of the bad corners, but if there is any tendency in this direction it is easily counteracted by pulling the weight slightly forward again before the turn is quite completed.

All these movements of the weight backwards or forwards must be made rapidly but smoothly, so as not to rock or shake the machine or prevent it in any way from running on freely. It is also important when dropping back for a curve or corner, that the weight should go back to exactly the right place every time. It must go neither too little or too much, but exactly right. The only way to ensure this is by having places marked along the side bars for the hands to take hold of. The weight has to go back further for a corner than a curve, so that there must be a mark for each. Just before reaching a corner one can look down and see that the hands are accurately placed on these marks, which are so placed that on leaping back to a straight arm the weight will be placed in exactly the position required for a curve or corner as the case may be. The position of these hand-grips can only be found by experiment. They can be marked with paint, or with a narrow strip of leather, or anyway a man pleases. The main thing is to get them accurate. Without these marks it is difficult to shift the weight correctly every time ; with

them it becomes quite easy. There are numbers of men who consider such apparently trivial matters as unworthy of their attention, but they are mistaken. Given other things equal the man who takes the trouble to look to these points will beat one who does not. When lying quiet down a fast straight it is better to be rather back than forward on the machine. It is not a very important point, but it does something towards increasing the pace, by getting the weight off the bows and letting them rise easily over the snow.

So far I have said nothing about the start. The first thirty or forty yards after the starting place on this road are so flat that a good start is of the highest importance. The best I have yet seen was that employed by Mr. R. Wilham in the International Race of 1894. He commenced with an extremely good example of the ordinary running start which has already been described ; but instead of pitching flat on his machine he pitched on one knee and punted vigorously to the first corner, where he lay down and pegged. When learning this mode of starting, which is by far the best that can be adopted, the difficulty is to leap on to one knee with any accuracy. It is not difficult to miss the machine altogether. It is very easy to upset it. Personally I tried it, but found I had not sufficient time at my

disposal to make sure of it. Now and then all went well, but as a rule something went wrong. So I gave it up and did the next best thing, which was to pitch flat on the machine as in the usual running start, and then get up on one knee and peg. This is a safer method than the other and does not require so much practice, but it certainly is not so fast. The beginner ought to practise pitching on his knee and starting punting at once, and he ought to go on practising until he has mastered it. It is a trick well worth learning.

In conclusion, when racing on the Klosters road bustle along from start to finish. Ride your hardest all the way through. The old running maxim is of the greatest value, 'Think always of the winning post, never of the man behind you.' Try and think you are racing something all the time. Your shadow, if the sun is out, is an excellent thing. You cannot beat it, but you can try ; and it is wonderful what a difference this imaginary racing will make in a man's time.

CHAPTER XIII

HINTS ON RIDING THE KLOSTERS ROAD FOR
THE INTERNATIONAL CUP RACE

THE International Cup Race is now the only race of any importance in the Alps in which both the old Swiss toboggan and the sitting position are preserved. The race has lost much of its old importance, having given way, in a great measure, before the Shield Race, in which the America, ridden headforemost, has proved a greater attraction.

The following hints have been collected in the course of conversation with many of those who were giants in the days when the Cup Race at Klosters was the greatest event in the tobogganing world. They are of necessity sketchy and somewhat incomplete, for it must be borne in mind that in the days when the Cup Race flourished, though discussions were many, and though men disputed hotly over the various points connected with riding, still the sport did not then go through that searching scrutiny which it has

since undergone ; and that keen analysis of the theories connected with riding a run over every trifling variation of slope and curve, which has played so large a part in the recent development of tobogganing, was as yet unknown.

But the few points which have come down to us from the riders of nine or ten years ago were learnt by dint of much hard practice, and were the result of the experience gained by innumerable runs down the Klosters course. They have stood the test of time, and they are as sound to-day as they were when first formulated ten years ago.

The first thing is the machine. But here the choice is very limited, and no great variation in shape is possible, as the modern rule limits the machine to 'that known in the Graubünden Canton under the name of Handschlitten.' As the committee further reserve to themselves the right of disqualifying any doubtful type, it behoves the inventive genius to be careful. It is a pity that the authorities do not define more clearly how far they will allow the Handschlitten to be modified without disqualifying it. All they tell us at present is that it must not have spring or round runners. But there are many other ways of improving the Handschlitten for racing purposes ; the runners may be lengthened, the breadth of runner resting on



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H FREEMAN PEGGING ON THE KLOSTERS ROAD

the ground may be reduced, the machine may be constructed lower than at present. All these would be improvements, and it is perfectly easy for the committee to state how far such alterations might be carried by fixing the minimum height, the minimum width of blade, and the maximum length of runner which they would permit ; or else by making it quite clear that the *only* limitations they impose are that the machine should be of the Swiss pattern with flat runners. It is quite legitimate for a man to build the fastest type of machine he can, but anyone making any alterations under the present conditions would have an uncomfortable feeling that he was trying to take an unfair advantage of others.

Apart from the points already mentioned, there are several things to be looked to in purchasing a machine. Since the introduction of 'America' the demand for the 'Swiss' has slackened considerably. They are for the most part a drug in the market, and consequently are no longer made with the same care and attention as of yore.

The best machines will probably be obtained from the Allemanns, at Klosters, who combine toboggan-making with racing, and so know exactly what is required.

The first thing to see is that the runners are abso-

lutely parallel, and rest flat upon the ground. Unless the runners are parallel the machine cannot possibly travel fast, but the Swiss peasants used to have an idea that it was an advantage to have the runners closer together at the bow than at the stern. Needless to say, this theory is unsound, but it is surprising to find how many machines are constructed in this manner. I recently took the trouble to measure the runners of fifty Swiss coasters in the store of the Kulm Hotel at St. Moritz, and thirty-one of them had this fault. The runners will usually be found to rest flat upon the ground as long as the supports connecting them with the seats are perpendicular ; but when the latter are splayed to increase the stability, it is very common to find that the runners are fixed to these supports in such a manner that they run upon their inner edges instead of on the flat.

The next thing to examine is the wooden framework. This *must* be made of old, well-seasoned wood. Nine-tenths of the machines of the present day are made of unseasoned wood, which will warp and shrink rapidly when exposed to the dry air of the Alps.

The metal runners are usually fastened to the wood with screws. This is not a good way of fixing them. The screw-heads destroy the symmetry of the

surface of the runners, and no matter how well they are screwed home they will catch up a certain amount of snow and appreciably check the pace. Bolts are infinitely preferable, and when they are filed flush with the surface of the runners there is no risk of their increasing the friction. Bolts are also a much stronger and more lasting means of fastening two substances together than screws.

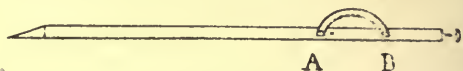
The cushion, to which so little attention is paid nowadays, should be of plush, or, better still, coarse canvas, to ensure a firm seat when pegging. The position in which the cushion is placed upon the seat is also of importance, and is a point to which considerable attention used to be paid in past days. It should be so placed that when the rider is lying back, going down a fast straight, the bows do not lift off the snow, and when he is sitting up and pegging, the bows will not be driven into the ground. The happy mean can be found only by experiment.

The weight of the machine should depend entirely upon the state of the road. On a fast course weight is most distinctly an advantage, while on a slow course a light machine is easier to peg than a heavy one.

Next we come to the pegs, the proper shape and use of which used to be great subjects for discussion in the past. The majority of those offered for sale

are made of alder, which is about the worst wood that could be selected for the purpose, as it splits easily under the strain of pegging. They ought always to be made of well seasoned ash. The pegs should be as long as the rider can conveniently handle, and should be cut thick, so as to give them greater strength. Opinions differ as to the best grip, some using a socket cut in the peg to fit the hand, while others prefer the sword-handle grip.

For the second of these, which seems rather more popular than the other, two holes (A B) are bored



Sword-handled Peg

through the peg. A leather thong is passed through these and fastened down just tight enough to go over the hand with a thick glove. This allows one to release the tight hold of the peg with the fingers, which is apt to cramp them in very cold weather, and almost always ensures that the peg will not be lost or dropped. From the above sketch it will be seen how easy it is, with a turn of the wrist, to bring the screw into play round a corner.

One end of the peg should have an iron point

fitted into it for pegging, and at the other end there should be a screw with rather a large head for steering. The iron ferrules which hold the wood fast round the point and screw must be firmly riveted to the peg, to hold them in their places. If this is not done they are liable to come off, and the loss of one when pegging will cause the point to split the peg and render it useless. The point and ferrule of the stick should, if possible, be made in one. The point should not be too short. Occasionally one sees pegs with 1 to 1½ inch points, virtually long nails. These are quite useless, as they dig too far into the ground.

Having settled these preliminaries, we can now turn to the actual riding. The first thing the beginner has to learn is to sit in the middle of his machine, and balance himself properly upon it down the straights and at the corners. This is a mere matter of practice and is not a thing which he can be shown how to do, though he can learn a good deal by watching others.

The next thing to learn is the correct use of the pegs. As far as St. Moritz riders are concerned, pegging is a lost art, and experts tell us that even at Davos it is not what it used to be. The chief thing to bear in mind is that the strokes must be long powerful sweeps and not short sharp jerks. The

hands must be brought well forward and upwards as high as the head, the body at the same time swinging back, then as the body swings forward again the hands are swept downwards and backwards with a long powerful thrust into which the back, shoulders, arms, and wrists must all do their fair share of the work. Like all other exercises of a similar nature, the swing of the body must be made to do as much work as possible, so as to ease the strain on the arms.

To watch a really good man pegging down the Klosters road is like watching a finished sculler. There is the same long regular swing, and yet every ounce of strength is being put into each stroke. He seems to be a machine, so regular and accurate are his movements.

But the beginner will find that it will be a long time before he can attain to anything like this perfection. He will have to go through much hard practice before he can even learn to peg evenly. He will find that one arm pegs more strongly than the other, and that the machine yaws about under his strokes to such an extent that he loses time by pegging instead of gaining it. However, he will have the consolation of knowing that by the time he has mastered this initial difficulty his muscles will have

got so hard by constant use that his pegging will be far more effective, and he can keep it up for a much longer time than he would have thought possible when he commenced to learn.

Hard pegging on the Klosters road will find out the weak spot in any man if he has one, and the strongest man will feel that he has had more than enough of it by the time he has raced down to Klosters on a slow course. While rounding a corner the peg on the outside of the curve should be kept going all the time, and if the corner is a very sharp one the peg on the inside of the curve must be used to steer as well. The further the rider leans to the inside of the curve the greater leverage will he get for steering, but he will at the same time diminish the effective power of the stroke with the outside peg.

It is pretty generally admitted that, whether the course is fast or slow, pegging is absolutely necessary while rounding curves or corners, and also while running over the various strips of level ground which are to be found on the course. It is also plain that if the course is heavy and the going slow, the man who can peg longest and strongest in the straights will make the fastest time. But it is quite possible that the course may be so fast that pegging becomes practically useless, and in such a case the correct

thing to do is to stop pegging and lie back as flat as possible, thus diminishing the wind resistance, and let the machine slip along at its own pace. When lying back the legs must be brought together as close as possible, resting on the side bars close to the front, so as to keep the bows from rising off the ground. Each man must decide for himself whether the course is fast enough to dispense with pegging down the straights or not. If he finds that he is inclined to quicken the pegging, and that the strength he puts into the stroke seems to expend itself before the points of the pegs hit the ground, it is time for him to stop pegging and lie back.

This lying back is more often seen on an ice-run than on the Klosters road, for unfortunately the occasions upon which the course is fast enough to enable one to dispense with pegging are few and far between.

Nothing is more irritating, when racing on the Klosters road, than to fall at the last corner after having made a really good course. And yet it is a very easy thing to do. Many a good rider has had his hopes destroyed by rushing at it too fast and failing to get round. Mr. Freeman gives a tip for riding it which should be most useful to the beginner. He says:—‘Often when going too fast at the last

corner at Klosters, I have put my heel under the left runner to bring the machine round quickly. It did not, as a rule, do the boot much good, but it was very effective.'

Here my hints to beginners must end for the present. If they help in any way to lessen the difficulties of the novice I shall feel that my labours will not have been in vain. But I would point out that although a book may help by showing the principles and methods on which to work, it cannot teach. In a scientific sport of this kind there is only one road to success, and that is—persistent, intelligent practice.



FINIS

APPENDIX A

WINNERS OF THE INTERNATIONAL CUP RACE, DAVOS

Date	Name	Nationality	Time	Machine and position
			m. s.	
1883	{ G. P. Robertson .	Australia	9 15	Swiss. Sitting
	{ P. Minsch . . .	Switzerland		
1884	P. Minsch . . .	"	6 35	" "
1885	G. Dale . . .	England .	6 35	" "
1886	G. Baillie Guthrie	"	5 47*	" "
1887	P. Minsch . . .	Switzerland.	6 43	" "
1888	L. P. Child . . .	U.S.A. .	6 03	America. Side position
1889	S. Whitney . . .	" .	6 28	America. Prone position
1890	" " . . .	" .	6 45	Swiss. Prone position
1891	P. Allemann . . .	Switzerland.	6 17	Swiss. Sitting
1892	J. Vetsch . . .	"	6 40	" "
1893	" " . . .	"	6 39	" "
1894	G. P. Humphrey .	England .	6 43	" "

* Fastest time on record for a Swiss toboggan.

All races were run in one heat on the Klosters course except the race of 1888, which was run in two heats at Clavadel.

*WINNERS OF THE INTERNATIONAL SYMOND'S
SHIELD RACE*

Date	Name	Nationality	Time	Type of machine
1890	S. Whitney . . .	U.S.A. . .	m. s. 6 27	America
1891	G. Gouda-Quint . .	Holland . .	6 12	"
1892	H. W. Topham . .	England . .	6 4	Skeleton-framed America
1893	C. C��ke . . .	" . .	5 58	America
1894	Hon. H. Gibson . .	" . .	5 7*	Skeleton-framed America

* Fastest time on record.

APPENDIX B

*WINNERS OF THE GRAND NATIONAL
TOBOGGAN RACE, ST. MORITZ*

Date	Name	Place	Time	Type of machine	Fastest time prize
1885	C. Austen	Davos	m. s. 5 09	Swiss. Sitting.	—
1886	P. Minsch	Klosters	4 44 $\frac{2}{5}$	" "	P. Minsch, 1 m. 31 $\frac{1}{2}$ s.
*1887	G. Baillie Guthrie	Davos	6 08 $\frac{2}{5}$	" "	B. Dwyer, 1 m. 58 $\frac{3}{5}$ s.
†1888	E. Cohen	St. Moritz	6 39 $\frac{1}{5}$	America. "	H. Freeman, 2 m. 12 s.
1889	— Vansittart	"	4 41 $\frac{3}{5}$	Canadian. Head- foremost	Vansittart, 1 m. 30 $\frac{1}{2}$ s.
1890	— Towle	"	4 09	America. Head- foremost	Towle, 1 m. 22 s.
1891	J. F. Patterson	"	4 17 $\frac{1}{5}$	America. Head- foremost	Chanler, 1 m. 24 s.
1892	H. W. Topham	"	4 32 $\frac{2}{5}$	Skeleton-framed America	Topham, 1 m. 29 s.
1893	Hon. H. Gibson	"	4 33	Skeleton-framed America	Cousens, 1 m. 29 $\frac{1}{4}$ s.
1894	H. W. Topham	"	4 45 $\frac{1}{5}$	Skeleton-framed America	Patterson, 1 m. 14 $\frac{1}{2}$ s.

* The course was 1,650 yards long.

† The course was 1 mile long.

APPENDIX C

*RULES FOR DAVOS INTERNATIONAL
TOBOGGAN RACES, 1894*

I

THE committee of management will decide the order of running by drawing for places.

II

Competitors shall be started at such intervals as the committee of management shall appoint.

III

Competitors shall start at the time and in the order stated in the official list.

IV

A starting-line shall be drawn across the course, which line must not be overlapped by any part of a toboggan about to be started.

V

Competitors riding Swiss toboggans must start seated on their toboggans, which must be kept motionless until the signal to start be given. Those riding 'Americas' may start in any manner as soon as the signal is given.

VI

Each competitor must finish on his toboggan, and shall not get off, carry, or lift it, except for the purpose of avoiding an obstacle, or in the event of being upset: in either of which cases he must resume his position on his toboggan in such a manner as he thinks fit, within a reasonable distance.

VII

A competitor who is overtaken by another must keep well to the left to allow the overtaking competitor to pass clear on the right.

VIII

If any competitor start before the signal be given, he shall be reported by the starter to the committee of management, who are empowered either to disqualify him or to deal with the case otherwise as they may think fit.

IX

In case of a tie for the first prize, the competitors concerned shall either run it off at such time as the committee of management shall decide upon, or shall decide the matter by declaration to the committee of management of the withdrawal of a competitor or competitors; and in the case of a tie for other prizes, the committee of management shall adjudge the prize by lot in the presence of the competitors.

X

In the event of ties or heats the competitors shall not be allowed to change their toboggans or in any way alter the racing conditions of the same. But in the event of a toboggan being so damaged in the first heat as in the opinion of the committee of management to render it unfit for racing purposes, the toboggan may be changed with the sanction of the committee.

XI

All disputes must be referred to the committee of management immediately after the race, and their decision shall be final.

The above rules apply to the races for the 'Symond's Cup' and the 'Symond's Shield.' The following rule applies to the race for the 'Symond's Cup' only.

XII

The only type of toboggan qualified to run for the Symond's Cup is that known in the Graubünden Canton under the name of 'Handschlitten,' which must be ridden in a sitting position. (Spring or round runners are not permissible.)

XIII

For the Symond's Shield any pattern of single toboggan without mechanical attachment, but with any method of weighting, is permissible.

The committee of management reserve to themselves the right to decide whether the type proposed to be ridden is in accordance with these rules.

APPENDIX D

*ST. MORITZ TOBOGGANING CLUB GRAND
NATIONAL RULES OF RACING, 1894*

I

ANY pattern of single toboggan is allowed to be used, without regard to its weight (added or otherwise), size, or shape.

II

No mechanical appliance acting as movable steering-gear or as a brake may be used. The committee reserve to themselves the right of disallowing the use of any pattern of peg or method of steering which they consider damaging to the course or contrary to the spirit of this regulation.

III

No preliminary run to be allowed on the day of the race. Any competitor who breaks this rule will be disqualified.

IV

The race will be run in three heats, the aggregate shortest time to win.

V

(a) A dead heat for the Cup, or for any prize given for the shortest aggregate time, must be decided by the aggregate of two more courses. Competitors to settle their first order of starting by spin of the coin, and that order to be reversed in the second run. The time of running off the dead heat to be at the discretion of the committee.

(b) When two competitors tie for the 'Fastest Time Prize,' the second best course made by either of these two shall take the prize.

VI

The committee will decide the order of running by drawing for places. Competitors shall be started at such intervals as the committee shall appoint, and shall start at the time and in the order stated in the official list.

VII

For the start the competitor must stand with the nose of his toboggan not more than ten feet behind the timing-line. After receiving permission from the timekeeper he may start in any manner he chooses, the time being taken as the nose of his toboggan passes the timing-line.

VIII

A competitor must arrive at the finish with his toboggan, and in case of being upset whilst riding he is permitted to run with or carry his toboggan in order to restart himself.

IX

(a) Accidents happening from unforeseen obstacles on the run will be considered by the committee with a view to giving another run down, which must be, if possible, run off immediately after the heat.

(b) Any objection under this rule is to be lodged by the competitor previous to his running the next heat, or, if it be his last heat, with the nearest official on the course.

(c) If, however, a competitor should have an upset, and after restarting should run into an unforeseen obstacle, he shall not be allowed a fresh run.

X

The time-taking will be decided by the official chronograph only.

XI

All disputes must be referred to the committee immediately after the race, and their decision shall be final.

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